

POPULAR

LECTURES

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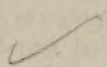
MECHANICAL NATURE AND PHYSICAL CURE

OF

CHRONIC DISEASES

OF THE

HUMAN TRUNK.



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P R E F A C E .

DID the author of this little work regard either the admiration or contempt of the world relative to its publication, he most certainly never could have consented to it; being aware that momentous and ungarnished truth is its only desirable quality. It is designed only, for that portion of community, whether professional or not, who are willing to learn, even at the expense of former knowledge, and the yielding up of the most darling opinions. In the pages of this work, the author has aimed to address both the common sense, and the dearest earthly interests, of all classes of society, and has chosen his own peculiar style in doing so. This is the first draft, and was written in great haste, consequently it is very imperfect in style and extent. Much that is important respecting physical education and deportment has been omitted, and it is only permitted to go into the world at the solicitation of his friends, and the hope that he will, at a future day, be able to offer a more perfect work.

The author regrets that in his haste, he has introduced many terms that may not be understood by the non-professional reader; to make up for which, he has affixed a glossary in the after part of the work.

That this unassuming work may do much good, by pointing the afflicted to the true character of, and remedy for, their sufferings, and be the instrument of exciting the rising race to the study of human physiology, and also to return to an implicit obedience to the laws of life and revelation, is the desire of the very humble

AUTHOR.

LECTURE I.

LADIES AND GENTLEMEN:—

In our remarks in this lecture, we design to be brief: as in them we only propose to set forth our object in the ensuing lectures, and offer our apology for, and introduction to, our peculiar views.

Our object is not to make doctors of you all; or to insinuate that every body is competent to be, or should be, a Doctor. — Neither is it our desire to teach the members of the profession, or lay claim to any discovery, thereby demanding that applause that is courted by the ambitious.

Respecting the medical profession, our object is only to offer to them our views on the influence of the natural relations of matter, as exemplified in the arrangement and formation of the human trunk, and its organs; and to inquire, whether in this natural and mechanical view, we cannot find a satisfactory clue to the nature and origin of many vital and functional effects, whose definite character and rationale, have hitherto been but dimly elucidated, by the dubious light of conjecture and hypothesis, on the vital principle. For, if we can learn that the cause of some of the most opprobrious diseases, lies in the relations of the organs, as matter, independent of the vital principle, we of course will have our attention turned to this arrangement, in our curative intentions.

But let it be remembered, that in our attempt to demonstrate a mechanical origin, and perpetuity of some of the fatal vital derangements, we only aim at establishing the fact, as it operates like other facts, not exclusively, but as circumstances may be.

Concerning our address to the non-professional part of community, we observe, that it is our object to explain to them some of the fundamental principles of the human economy; thereby enabling them to see clearly, that in the laws of life in their own bodies, they are provided with the antidotes and preventives of most of the chronic and fatal diseases that afflict the human race; and that they have in their systems the most efficient and harmless curative means in nature, viz. the recuperative powers of life; obedience to the laws of life; and a resort to physical means, as indicated by

the commonest phenomena of life and nature. And what is more, we design to show, that in all this there is no mystery, but that it is all the dictate of common sense.

The ultimate object and desire of the medical profession has been, and now is, to provide for the human race an antidote to, and remedy for, all the variety of forms and intensity of woes, with which disease afflicts the mortal body. But, laudable and desirable as is the attainment of this object, it is to be acknowledged that it has come far short of its attainment. Yes; the many badges of mourning for the untimely loss of friends, the decrepid forms, the protracted agonies and groans of languishing mortality, all testify, that the prowess of our profession is circumscribed, indeed. But, circumscribed as it is, and glaring as is the fact, it is equally true, that, by aiming at the whole, and by combined and united energy and perseverance, the profession has been of incalculable benefit in the amelioration, if not the cure and prevention, of nearly all the woes incident to human life, in the form of disease. Many, by its wisdom, are taught to shun and to counteract the predisposing causes to disease; by it, many *would be* fatal diseases, are arrested, checked, or finally deprived of their victim; and many that have hitherto been incurable, have been mitigated.

Still, there is a class of diseases that marches on in scornful triumph, bearing its victims steadily and boldly on, amidst the ranks of demurring friends, in spite of all the glittering implements of the surgeon, and the less frightful, but not less potent drugs of the apothecary. Yes, in this our day, there are diseases, so fatal and sure in their course, that we have little to do, but to be certain of their actual establishment in ourselves or friends, and to prepare for the world where no disease can come.

A natural inquiry will here present itself, like this, — And is there no hope, no prospect of triumph over the worst of diseases, in time? We answer, that in view of the ill success of the efforts of the profession in some of the diseases, there seems to be but little hope; but, in another point of view, there is one ray of hope to cheer the physician, and the heirs of disease, viz. this, — the rapid march of improvement in science for a few of the past years, and the final triumph over many diseases that were once considered as fatal. Once, the various forms of Scrofula were considered as positively incurable, as a constitutional disease; but now it is not so. Once, diseases of the Liver, and many others,

were viewed in the same light, but may be now approached with complacent confidence.

Upon the strength of these facts, we have a right to hope, upon every principle of philosophy, (reasoning a priori,) and we do verily believe, that, before time closes, there will have been found an antidote and a remedy for every disease; and that if the whole human race would live in consonance with the laws of life and of revelation, every son and daughter of Adam might live out all their appointed days, or come to the grave like a shock of corn that is fully ripe and laden with plenty. But we ask, from what quarter is this relief to come? Has not the ingenuity and imagination of the whole world been racked, in speculations on the vital principle, to find out a rational hypothesis on the action of consumption; and has there not from thence sprung as many theories of its cause and nature, as there are ambitious men in the profession? Furthermore, has not the whole material world, from the mineral to the animal kingdom, been ransacked, to find remedies for this and other fatal diseases? Yes; and with wild frenzy have they been applied, often till the last vital spark was smothered. Then since every speculation on the vital principle has failed in the elucidation of the nature of our fatal diseases of the trunk, and seeing that every variety of treatment, as applied internally, to act only through the vital principle, or on the excitability of the fibre through the vital principle, has completely failed, what shall we say? Is not the prospect of success on the old doctrines a gloomy one?

But has every source been fathomed? We say, no; transporting experience has lighted up a hope of better days, to some extent. This hope is found, on returning from the vital principle of man, (as being the seat of these diseases,) to his material part, and viewing it in its formation and arrangement, as being primarily concerned in the derangements of the vital function: and you will plainly see, that we believe that most of the diseases of the vital functions are but the effects of some mechanical derangement.

Much time and talent has been expended upon the physiology of the human system; and whatever dignity may be attached to the profession, or efficacy ascribed to it, is referable to the success of physiological research. But many of the discoveries in this science have been plants of slow growth, and of modern development.

We will here remark, that it is singularly true, that progress in science has not brought to light any new or great

mysteries to astonish the wondering and admiring eye, or to perplex the inquirer, with the increasing complexity and number of the laws that control the human system in health and disease; but the march of science has tended to sweep away the mists of complex theories and hypotheses, and to the unfolding of the mysteries and laws of the human economy, — showing that they are few in number, and that they consist in simplicity of principle and function.

Furthermore, as the healing art progresses, it tends to reduce the science of life and disease to those general and tangible laws and principles, that preside over and govern the universal action of matter. Thus, the false dignity of the profession is being swept away.

We say, that new discoveries tend to sweep away the false dignity of the profession, and make the healing art beautiful, seeing that the phenomena of life are so complicated, while the laws that govern them are so few and simple, and easy to be comprehended by every common understanding.

Once, the human system was looked upon as a mere moving mystery, without any rational comprehension of its structure and functions. Once, the muscular system, by which all the movements of the body are propelled and made regular and efficient, was not at all understood. Once, the circulation of the blood, by which the system is perpetuated and nourished, was not dreamed of: the best and wisest of the faculty supposed that blood flowed through the system like water through a sponge. The function of assimilation, by which the food is turned to blood and flesh, was not conceived of; and many other matters like the above, were chaotic, but now are perceived by every common understanding, and explained by the general action of matter on matter.

Again, as the human economy is more perfectly understood, the more does it resemble a machine of great complexity and perfection; and that it, like a machine, is governed and propelled by the combined mechanical powers and philosophical laws that control all arrangements, and give order to their operations; thus reducing the science of life and disease to those great and tangible principles that are understood by every one; making the human economy to appear sublime, as well as wonderful, and giving us rational cause to exclaim with the Psalmist, "For we are fearfully and wonderfully made." — But while we hold up this analogy between animate and inanimate machines, we will here speak of some of the characteristics between them, viz. — The one is made

by finite hands, propelled and perpetuated by second and promiscuous causes; whereas the other is made by the Eternal hand, in infinite wisdom, and is propelled and preserved by an unseen power, in an unseen and hitherto mysterious manner, and that, in an unceasing stream, till life is extinct.

These crude ideas will be our apology *for*, and introduction *to*, the ensuing notions on the physiology of the human system; and the pathology of many chronic and formidable diseases; together with a proposed plan of prevention and cure.

Much as we admire the research of Magendi, Richerand, Chapman, and others, and value and acknowledge the accuracy of their conclusions, we have not felt satisfied that all was known that might be; and while we could offer no improvement to their views of organic life, as exemplified in the functions of assimilation, secretion, absorption, the heart's action, &c., we are emboldened to inquire a little further for a satisfying pathology of Consumption, Dyspepsy, Prolapsus, and other diseases, and see if they do not originate in the morbid relative bearing of the machine; and thereby render those opprobrious complaints more manageable, in some cases at least. We believe that a common cause of the chronic complaints of the human trunk may be found in the mechanical arrangement, and is to be treated on natural principles, or rather, by restoring the parts to their natural bearings; believing them to be only symptomatic.

Our inquiry is based upon the following positions, viz: When we look into the general principles of natural philosophy, or the general action of matter, and take into consideration the mechanical powers that govern and propel all machinery, and see how natural their action is, and compare *them* with the anatomy of the human body, its functions, and the position of its parts, we are led to conclude that there is a striking analogy between them, in action, and in propelling power. We see, that in machinery, it is the due and primitive relation of parts, and the action of matter and power upon this relation, that secures their designed action. Just so we infer in the *human* system, (so far as matter and mechanical arrangement are concerned,) that a certain relative position of organs is designed, and *only* one relative position, and that that arrangement is mechanical, or under the ordinary mechanical laws.

We also see, that when there are derangements in the operations of machinery, they are remedied with direct reference to the mechanical derangement, whether of shape or mal-position; without any reference to any inherent property,

or a change in the composition of the material. So we infer in the human system, so far as matter and mechanical arrangement are concerned. For instance, if one organ change its place, it breaks the primitive and reciprocal arrangement, the mechanical relation will be lost, and there will be vital derangement, from a mechanical cause. And why may this not be reasonably inferred of the soft parts, since this law prevails in the hard? If there is the least departure from the primitive arrangement in the bones, there is immediate pain, and loss of function.

Furthermore, the malady is always remedied by mechanical force, placing the parts in their primitive relation.

With these remarks, we proceed to show, that in our view, there are two physiologies of the human body. One being the *vital*, presiding directly over the vital functions, as,—the heart's action, muscular contraction, assimilation, secretion, absorption, &c. The other being the *mechanical* physiology; which in part, is independent of the vital. It relates to the mechanical and relative action of the organs on each other, as matter, upon philosophical principles, independently of vitality, sympathy, or nervous consent. We also design to show, that unless this relation be accurately preserved, there will be placed an incumbrance on the vital action; thus the equilibrium will be broken, and either local or general derangement will be the consequence.

Our opinion is, that the true physiology of either of the three cavities of the trunk, cannot be fully comprehended by an isolated examination of them, without simultaneously having a reference to the natural formation, bearing and functions of the other two. Or in other words, they must be viewed in their collective, as well as individual bearings, independently of any chemical or vital effect.

We believe that there is one certain, proper place and position, for every organ, or set of organs, that constitute man, and that institutes a healthy action; and that no other relation will do. Consequently, that every remove from that original design, which is truly mechanical, will both constitute and institute disease, just as a remove from the relative bearings of a complicated machinery, tends to injure the parts; but more especially, to obstruct its regular operations. This effect in *machines*, of course is always the result of *common* causes, without reference to the power that moves, or the elements that compose the parts. Consequently, we believe that every remove from the natural and proper bearing of every organ of the human body, has a tendency to produce

an aberration of function in, perhaps, the most remote organs of the trunk, independently of sympathy or identity of function. For instance, the case of prolapsus, and the attendant effects, as, hysteria, palpitation of the heart, &c.

Hence we will be pardoned for intimating, that physiological investigation is often confined too exclusively to the vital action of each individual organ, or set of organs; without calling to our aid the mutual bearings of all the organs, and inquiring, what would be the necessary consequence of departures from that relation; that we too often are *blind* to the mutual reciprocities that exist throughout the system.

Now, if this be true, it will be realized in our pathology, *especially*, as that is the very point for which the science of physiology has been cultivated. We will incline to confine our search for causes, to the *ostensible* seat of the disease, or to locality of the pain, when it is only the effect we see; hence, we will be prone to treat symptoms, instead of causes, and too often leave the patient uncured, when the cause is remote and simple. Whereas in our view, a large and formidable group of diseases, that were only sympathetic, have been considered as primary, and treated as such.

For the laudable purpose of reducing to simplicity of origin, pathology, and treatment, a formidable group of diseases, that have been the bane of domestic happiness and the opprobrium of the physician, we humbly propose to investigate the physiology of the three truncal cavities, in health; with all the associations that would grow out of such a relation. This we propose to do in a common sense way, without reference to the vital physiology, or nervous action, having no other object in view than the advancement of the profession.

We will first take an anatomical, second, a physiological, third, a pathological, view, and fourth, offer some practical suggestions, or rather, we will treat the whole, side by side.

LECTURE II.

WE will first examine the pectoral cavity, and its contents, in its anatomical, physiological, and pathological relations.

This cavity we find at the superior portion of the trunk; consisting of the spine, sternum and ribs, with the muscles attached. Of the spine and sternum, little need be said for our purpose; suffice it to say, that the spine is a perpendicular pile of bones; admitting of slight motion. It forms the base of the chest, and the principal attachment of the ribs, by means of cartilages. The *sternum* is situate at the superior and anterior portion of the chest; exciting little action, or influence; but to serve as a firm bond of union to the long ribs, and to strengthen the circle of the chest.

The ribs are long and curved bones, attached to the spine and sternum, i. e. the true ribs; the false, or short ones, being situate at the lower portion of the chest, and below the sternum, are attached to each other by means of cartilage.

The ribs are all of a curvilinear form, their convexity being downward and outward; of course, allowing only of motion, outward and upward, as in the expansion of the chest. In this expansion of the chest, the short ribs participate more fully, as their front ends allow of being separated, not being bound at the anterior extremities, like the true ones; thus showing that the chest was designed to be in the exercise of great liberty of motion, especially the lower portion of it. Of the superior boundary of the chest, little need be said for our present purpose; suffice it to say, that it consists of the larynx and pharynx, of which we will speak at length in the sequel.

The lower boundary of the chest consists entirely of the diaphragm. It is membranous, tendinous, and muscular. This is a very important organ, constituting the dividing medium between the chest and abdomen. It is attached to the whole circumference of the chest, principally by the edge of the ribs; following their form at the front of the trunk, ascending from right and left, obliquely upward and inward, to the centre of the body, at the *scrobiculus cordis*, where it comes to an angle; giving the chest somewhat the form of a saddle; and the superior portion of the abdomen, an appearance like the roof of a house.

Now, there are two or three things that it is important should be borne in mind concerning this organ, that we will notice here, for particular use, to wit: this organ is much the highest at its centre, or angle, and is stretched across the chest by the spine, sternum and ribs, and it must undergo varying degrees of relaxation by the mobility and alternate relaxation and contraction of the chest; consequently its angle would gravitate permanently, were it not for an attachment of the reflections of the pleura and mediastinum to its upper surface.

2d. This organ is concave below, and convex above; and *this* is its natural position in life and in death, as is indicated at the birth of the child, and at the death of the man.

3d. It is to be remembered that there is nothing in either the arrangement or structure of this organ, or in its attachment, to preserve it thus concave, or to enable it to act as a suspensor, to sustain the pendant organs. As well might a leather dome suspend a mighty weight, as *this* organ sustain the abdominal contents. Of course, then, it was not designed that it should do it.

The contents of the chest are the heart and lungs. The heart is a large, heavy, active organ, occupying a little to the left of the centre; it is wholly muscular, and designed to be in constant action, and *that*, too, with great uniformity and equanimity. This organ seems to be partly suspended by its ligaments and vessels, and partly *supported* by the diaphragm from below, when in its proper position.

These remarks we will call into requisition in our pathological investigation.

The *lungs*, together with the heart, completely fill the pectoral cavity, if the diaphragm be in *situ*; even when the lungs are perfectly collapsed. These organs are lobated and large, consisting principally of cells, whose walls are nothing but vanity; so much so that the whole collapsed lung weighs but six or seven ounces. And so completely do the lungs fill the chest, that the least inflation of them is accompanied by an expansion of the chest and abdomen. From the extreme delicacy of the pulmonary tissue, it appears that they were designed to be perfectly passive in all their respiratory and vocal operations; i. e. it seems, from their organization, that in expansion and contraction, they are the mere passive receivers and disbursers of air; having only a vital or chemical action to superintend. Of course, then, we conclude that these three functions will be performed by external influence, to wit: muscular contraction, atmospheric pressure, and the elasticity of the ribs and their cartilages. Respect-

ing primary contractility of the air cells, it is at best but a controverted point, not fully settled. But to our mind it is evident, that if any active contraction of the cells ever does occur, it is in disease, and not when they are healthily performing their functions. If this conclusion be correct, then we are compelled to look to some other quarter than the lungs for the active respiratory and vocal action. And with a view to ascertain where it is, we will examine the physiology of the pectoral muscles; (as these will complete the whole pectoral apparatus,) and see if in their physiological and anatomical bearing we can conclude that the chest and its appendages are the only organs required or concerned in respiration.

First, we will consider the diaphragm, in the exercise of its contractile functions, and inquire into the extent of its respiratory agency. We have previously described this muscle, as being in perfect apposition with the *collapsed* lung, and that when in this position it is convex above and concave below; of course, then, when it is in active service, it must be by the contractility of its active fibres, and in this action it must lessen both its convexity and concavity, occasioning it to recede from the lungs. Thus it sensibly enlarges the pectoral cavity, thereby forming a vacuum that will be immediately filled, as there will be instant inflation of the lungs by atmospheric pressure. These organs will cease to be inflated when the diaphragm ceases to contract or enlarge the pectoral cavity. This is the point that constitutes the satisfying sense of a full breath. From these facts it is obvious that the direct and only action of the diaphragm is to enlarge the pectoral cavity; and if it *enlarge* it by contraction, of course, it cannot *contract* it by the same or any other action of its own. Well, if this be so, then we must look further for the full set of respiratory agents, as neither the lungs or diaphragm are adequate to produce the least contractile effect on the chest.

We next find the two sets of intercostals, situate between the ribs, and running in opposite directions; their fibres are short, and can act only from rib to rib. Of course, then, as the superior part of the chest will be the pivot or fulcrum, the inferior, loose and unattached ribs, will be raised by the contraction of these muscles; but there can be *no* contractile force exerted by them assisting in expiration and vocality.

We have next the pectoralis major and minor muscles, situate on the superior region of the chest, and inserted into the arm and shoulder. Of course *their* functions can only be

to assist in inspiration, and in the movements of the arm and shoulder.

Hence we see that neither the whole set of pectoral muscles, nor the lungs, are able to exert any agency in voluntary and forcible expiration, as in vocality and the blowing upon wind instruments, &c.

But there is *one* muscle that seems designed to assist directly in this function in a feeble manner, to wit: the sterno costalis, which rises from the cartilago ensiformis, and is inserted into the cartilages of the third and fourth ribs.

The next pectoral power is the elasticity of the ribs, which tends to contract the chest some by involuntarily reacting, and thus to restore the original dimensions of the chest, but this power is very slight, and being involuntary, could not aid in speaking, singing, or coughing.

We have now seen that there is a complicated set of inspiring forces, and but two feeble powers of expiration. It is also obvious that the varied functions of expiration require more force than would be requisite for inspiration. By this exposition, we are forced to the conclusion, that the chest, as a respiratory apparatus, is imperfect, and that there must be some remote organs associated actively in those functions.

With a view to account for this *expiring* deficit, physiologists give this exposition of respiration, which in part accounts for its moderate and involuntary performance, but does not furnish the power of coughing, sneezing, or vocality. They say that inspiration distends the abdominal muscles, by compressing the abdominal viscera, and that *they* react upon the viscera by their involuntary, inherent, resistance of texture. Now it will be readily seen that the contractility of texture cannot be increased by the will, so that we are yet unsupplied with the proper respiratory force. Another thing we see plainly, viz: that the chest is incompetent to perform the varied, or even the most ordinary respiration, without aid from a foreign quarter, which we now proceed to find.

Here, for the *present*, we leave this point, and will resume it again where it seems to be naturally called up, in the physiology of the abdomen.

We will now consider the pelvic contents in their *mechanical* and *relative* bearings on the trunical organs, independently of any vital influence. Of the form and relations of this cavity, little need be said for *our* purpose, save that the ossa pubes are nearly in the axis of the body, a

circumstance whereby the weight of the abdominal viscera on the pelvic contents is diminished.

Its contents are the bladder, rectum, and, in the female subject, the uterus and its appendages. The bladder is situated in the superior and anterior portion of the pelvis, with its body floating in the abdomen to accommodate itself in distension. The rectum is situated on the inner face of the sacrum, and bound down to it by cellular tissue, and a reflection of the peritoneum. Between these organs is situate the uterus and its appendages; it is suspended near the centre of the pelvis; it is scarcely an inch thick, one and a half wide, and two and a half long, possessing but trifling weight; it is supported in the following manner, viz:

First, by the vagina, which in health is very elastic, and according to some of the best writers constitutes its principal support, and is considered about adequate to that function. Above, it is sustained, in no inconsiderable degree, by a broad reflection of the peritoneum, reflected over its fundus and sides. Anteriorly, posteriorly, and laterally it is sustained by the cellular tissue, intervening between the pelvic organs. Furthermore, it is sustained in no ordinary degree by the round ligaments that arise from its sides, and are inserted into the groins, after passing through the inguinal opening. Again, it receives support from the broad ligaments that arise from the fundus and sides of it, and are inserted into, or dispersed over, the lumbar region.

Here it should be remembered that each of these supports, to appearance, might be considered adequate to sustain the inconsiderable weight of this trifling organ, *especially* when in a healthy state. But *especially* is it worthy of notice, that each of these supports is very large, in proportion to the organ they supply, compared with those of other organs whose size and weight are so much greater than that of the uterus. Consequently, when we view this *small* organ, and the combined powers that sustain it, we see a great disproportion of support lavished upon it.

Now, what are the conclusions to be drawn from these facts? The following are *our* inferences, to wit: keeping the minitude of the healthy, unimpregnated uterus in view, we conclude that all of this support is not necessary to sustain its mere weight, but that there are triple designs in the arrangement. For instance, we believe their *first* object is to preserve the uterus in situ; that the *second* object is to assist in sustaining the weight of the abdominal contents; *thirdly*, we believe there is a reserve strength in them, to provide for the additional weight in the four first months of

pregnancy, and that when the uterus is not gravid, then *it* has the advantage of the support, held in reserve for the gravid state.

Now let it be remembered, that were the impregnated and unimpregnated females of equal number, there would be as many of the unimpregnated as of the others, that complain of some degree of prolapsus: and if it be contended that the cause of prolapsus in the unimpregnated, be a want of original power in the uterine supports, where is the power to prevent perfect prolapsus in pregnation? for in that case, we see no provision made for that state; but it appears that thousands of females complain *none* in the first four months. Consequently, we believe that the weight of the bowels is the power that presses on the uterus and produces prolapsus. But it is urged by those who contend that prolapsus is caused by weakness of the uterine ligaments, considering it a primary disease, that it is unfair to reason thus, as in most cases of prolapsus the ladies have borne children, and have leucorhea, and that the vagina is previously weakened; thus inferring that it is a disease of the vagina that caused the prolapsus.

To this we reply, that this is not always the case; and that this leucorhea has very often been caused by the womb being crowded into the vagina, acting as a foreign body there, producing distension of the vagina, and irritation, exciting leucorhea. But for argument sake, we admit, that this disease and weak condition did exist before prolapsus; *they* gain nothing, but we gain something. We do not wish to prove that the usual weight of the abdominal contents on the uterus is *always* the *first* cause of prolapsus. But, that it always does come in, first or last, as the criminal in the case. Now in health there is a given amount of weight on the uterus, let us suppose that one of the chief supports of the uterus gives way: why, there is yet *double* power enough to sustain this organ, i. e. its nominal weight; but remember, that while some of the supporting power is gone, none of the weight on the uterus is gone to *balance* the matter; consequently, this weight completes, and keeps up the prolapsus, and not the vagina; as there is still uterine power sufficient to sustain the inconsiderable weight of the womb. Suppose an ass is taken sick on his way to market, with a moderate load on his back, he lies down, and seems unable to rise. Now, although it is evident that it is not the load that has injured him, yet the load in addition to his debility, renders him unable to stand; the load is removed, and he

rises up with his remaining strength, and is able to walk away: so here, when there does happen a previous debility of the uterine supports, the power of support is diminished, but enough is left to sustain the uterus, and nothing more; consequently this load of bowels, as in the case of the sick ass, consummates and perpetuates the disease; and, take off the load, and the organ will be relieved.

Hence, we infer, that prolapsus, without disorganization of the uterus, is never a primary disease, but is produced by mechanical encroachment from some other quarter. Hence, with deferential respect, we do declare, that the treatment of prolapsus, by tonics and pessarys, only, is not pathological or decent; and that it only gives temporary relief, at the expense of the vagina, and of a sense of propriety: that it does not remove the cause, only as the thickness of the pessary raises the abdominal organs, through the medium of the uterus.

We now proceed to examine the *abdominal* contents, in their mechanical bearings and mutual relations. The contents of the abdomen consist chiefly of the stomach, liver, spleen, large and small intestines, and the Mesentary and Omentum. We find the liver, stomach and spleen situate with their convex surfaces in perfect apposition with the diaphragm, even when it is compressing the collapsed lung, as we find in the still-born infant, and in the dead adult. Attached to them are the small and large intestines, with the mesentary and omentum. And here let it be distinctly noticed, that the principal suspensory support which these organs receive, is derived from the concave surface of the diaphragm, the messocolon, and the peritoneal bond over the duodenum; and that below the messocolon, are floating the large and small smooth intestines. Now when we reflect, that the diaphragm is nothing but muscle, and consequently unable to sustain even *itself*, but ought to be sustained by the viscera, how could we suppose that these suspensory supports are the powers by which the viscera are kept in situ. Hence we see that for them to descend would be an inevitable result, if left in this condition. We are then driven to the *pelvis* for the required support; but we find that its floor is an inclined plane, and not in the axis of the body; of course, the largest amount of weight would fall upon the pubes, leaving a mass projecting over it, in many subjects; *besides*, we see that such is the distance of this support from the chest, that this mobile mass would only be sustained in part, allowing the intestinal mass to elongate.

But were the pelvis even much nearer to the chest, the flexibility of the peritoneum, without the abdominal walls, together with the smoothness of the intestines, would allow of lateral displacement, leaving the diaphragm yet unsupported.

Thus far we have progressed by course, and have not yet found the full means of respiration, or of support to the general mass. Consequently we are driven to the abdominal parities, as the last resort, for the circumscribing and supporting power for the viscera, and for the power of respiration.

These walls (very unlike those of the other two cavities,) are composed of *flesh*, principally of muscular tissue, constituting a vital cavity, — designed to be in the constant exercise of vital action. Let us now examine these organs, in a common sense point of view, and see what might be expected from them. We first see them act as a mere mechanical, circumscribing wall to the viscera, as *matter* only. But were this all, there would be no elasticity, nor yielding to the circumstances of emptiness or fulness; besides, their action would be as much downward as upward. 2d. We see in them the vital elasticity of texture, by which the bowels are grasped in all circumstances in health, both of fulness and of emptiness, and that they yield to the various changes of these organs, but constantly resist any attempt at distension.

But were *this* all, we would find no *elevating* power in particular; the pressure being chiefly in a posterior direction. Of course the bowels below the mesocolon, would be forced upon the pelvic contents.

We will now view these walls as separate organs, and not as one contractile mass, and see if we do not find the required aid, indicated in the very mechanical arrangement of them. First, we have the ascending and descending oblique muscles. They both arise from, and are inserted into the ribs and pelvis, but principally centre at the front of the abdomen, forming the *linea alba*: their use is to bend the body forward, and to one side, and to gently assist in contracting the chest. Here we get the first intimations of the power of expiration, in the contraction of the chest; but their action is nearly as much downward as upward.

Next we have the *trans versalis* muscle: its origin and insertion, we need not detail; it centres in the *linea alba*, and its fibres run chiefly in the circumference of the abdomen: of course its use is to compress the abdomen still more: and as Dr. Wister has it, "it might not improperly

be called the constrictor of the abdomen;" of course, it only presses backward, the whole length of the abdomen. So we yet find the mechanical indications incomplete.

We next have the rectus abdominalis muscle, arising from the pelvis, and inserted into the chest: it is three-bellied, and capable of pulling the body forward; but if that action is antagonized, its lower portion only will contract, the chest will be by it contracted, and the lower belly diminished; of course the viscera will be raised, the elevating power then preponderating over the posterior.

Next we have the pyramidalis muscle, arising from the ossa pubes, and is inserted below the umbilicus; its use is to contract the lower belly, and of course to elevate the viscera.

Thus you see how the pelvic viscera are protected from pressure: you see how the abdominal organs preserve a determinate form, and portable condition. You see how that by them the diaphragm is supported, and not dragged upon: you see from whence comes the power of respiration, of vociferating, blowing upon wind instruments, &c. &c.

Now are not the abdominal muscles the tying link of support to the whole trunk; have they not a complicated and important set of functions to perform; and do they not do it upon mechanical principles: and did they fail to do it, would not the whole arrangement be mechanically changed, — producing vital disease, mechanically?

We have now established the very extensive use of the abdominal muscles, by anatomy and mechanical physiology, and will proceed to fortify it, by the *vital* physiology, analogy, and observation.

First, this view of the abdominal muscles is borne out by M. C. Bell's discovery on the nervous system. Seeing that that class of nerves called respiratory, supply both the pectoral and abdominal muscles.

Secondly, we are borne out in our conclusions by analogy and observation. For instance, when the hare, deer, or horse are fatigued, they straighten the throat, and carry on synchronous contraction and relaxation with each respiratory effort. Again, the Indian pursues the game without tiring, by the use of his belt. So much for *common* respiration.

We now design to show, that in a more *special* manner are these muscles the effective agents in vocality, and that by their use, the loudest vociferation may be indulged in, without injury to the lungs; whereas, without their use, the most moderate vocality is injurious to the pulmonary tissue.

When the swine squeals, or grunts, he does it by the con-

traction of abdominal muscles. When the cow lows, she does it by elevating her abdomen toward the chest. When the horse neighs, he does it by the rapid movement of the flanks. Now all of these animals make the most clear and deafening sounds, and never become hoarse. The child, also, has a round, hard, abdomen; the viscera are always grasped by the muscles; so that if the muscles contract at all, they at once play upon the abdominal contents, raising them up; consequently raising the diaphragm, of course thereby expelling the air, and thus producing expiration; and it is well known that they never become hoarse, from the most protracted screaming.

We have now got through with what we call the mechanical arrangement of man, as being that relation upon which depends the healthful action of the vital functions. We have thus far considered the system in its natural and healthy state, and *not* in disease. But with a view to reduce to *practice* our principles, we will next view this structure under the influence of mal-position, or relaxation of the abdominal muscles, if perhaps we may learn something of pathological value.

LECTURE III.

LET us now suppose that the abdominal muscles are relaxed, and have ceased to perform their elastic and voluntary functions. What will be the consequence? Common sense would say, that the intestinal chain would descend and rest like dead matter upon the pelvis and muscles, either dragging after them the other viscera, or leaving them to the influence of their own gravity, occasioning an actual sinking of these viscera, and an interruption of the reciprocal relation and mutual support of the truncal contents. It may here be objected, that from the strength of the peritoneum, together with the other supports, there will be such an embrace of the truncal contents as to prevent any descent of them, should the abdominal muscles even become much relaxed. In reply, we say, that it matters not how much or how little the descent may be, so that the mere fact of some descent does exist.

For example, the finger or nose are not designed to be permanently extended by an attachment of the most *inconsiderable* weight, and in order to prove that such extension would be injurious to them, it would not be necessary to prove an elongation of them to any given amount.

Furthermore, if an inch on a man's nose is a good deal, of course, in some other matters, one eighth of an inch would be much more. Hence we see that we have not to prove any given amount of elongation to show that serious effects will follow a breach of the primitive relation of parts. The fact is, that the state of *being* is changed, from that of comfortable support, to that of vacancy or tension; and we now ask, what are the effects naturally to be expected from such a derangement?

The following are the conclusions to which we have arrived, and we are to be pitied if in error.

First, the abdominal vault will be enlarged, and the law of gravitation will preponderate over the viscera, producing a complete change of relation, from the larynx to the anus. The consequences are the following :

The intestinal chain will lie coiled on itself, like an inactive mass, inducing a torpor in them, from the want of action in themselves, and their muscles to act on them; hence the sensation of weight in the hypogastrium, so common in Dyspepsy and Prolapsus. Again, this weight puts the peritoneum upon an unnatural and permanent extension, that is injurious to so vascular a tissue; giving rise to that tenderness and sensation of stricture in the circumference of the abdomen, so common in dyspeptics and others. Again, there will be that pain in the left side, so common in prolapsus and hypocondriasis, in consequence of a tension of the splenic ligaments. Again, the liver will be the seat of pain, by reason of the tension of the hepatic ligaments. This organ will also often become deranged by engorgement, for want of pressure on all points, to facilitate the passage of the biliary secretions, or there may be less of secreting power from the loss of the stimulus of pressure. Hence we see that many of the diagnostics of chronic hepatitis, are only the mechanical effects of relaxation of the abdominal muscles. Again, the stomach will be in a partial state of suspension, and loss of the benefits of pressure to assist in digestion. There will be sinking of that organ, or great sense of emptiness; the patient feeling as though his stomach was gone.

Now, two states or conditions may occur from this morbid

relation, to wit: general torpor and inaction; or great irritability of the nerves of organic life, and consequent vitiation of all the visceral secretions, producing either obstinate constipation or diarrhoea, — probably *both*, in alternation; cordalgia, and cold sense of weight, tenderness and enlargement of the liver, or diminution of its size and secretions.

In this situation, see how the patient bends forward, as if to touch something below; how he instinctively puts his hand to his exhausted stomach, and to the hypogastrium, to fill the indications of nature, by raising the viscera, to prevent himself from being jarred. In eight cases out of ten of hypocondriasis and dyspepsy, they will find relief by a judicious support, and whether the cause is muscular relaxation or not, that state of the muscles generally exists, as an exciting and perpetuating cause.

We will now consider the effects of this state of things on the pelvic contents, keeping in mind the morbid abdominal effects, as there will be a reciprocal action between those effects in the two cavities, and cause them to appear ambiguous.

First, the intestinal mass will tend to rest upon the fundus of the bladder, and produce incontinence, or retention of urine, by either compressing its fundus, or retroverting it, — thus explaining a mechanical cause of those afflicting complaints. This we have noticed too often for us to be mistaken in the matter.

The next effect we find on the colon, and rectum. The intestinal mass will tend to rest upon the colon, at its sigmoid flexure, and by degrees produce a mechanical obstruction to the descent of the fecal contents, as well as organic inactivity in them. Hence there will, from these two causes, occur an unhealthy accumulation of feces; they remain, become hard and heating, absorbing the natural secretions, and acting as an irritant to the mucous membrane, inviting an undue quantity of blood to it. At length the mass must be thrown off, with straining and force; pushing along the membrane, unfolding the lacune or folds of the intestines, and irritating the bowels. Let this state continue long, and you will have hemorrhoids for certain. In these opinions we cannot be mistaken, as we have so often observed their rise and progress in the above set of patients, and have had the pleasure of witnessing their hasty departure on the application of the Lacc. It has never yet failed in our hands.

We next speak of the natural effects of this relaxation on

the uterus, with their reflected influence. Our description of the pelvic contents and their relations will be borne in mind; especially that the pelvic contents form a natural floor for the abdominal viscera to rest upon, which they must and will do now, as the muscular support is removed by which they were elevated. Consequently, the uterus must bear this load with impunity, or be depressed into the vagina, permitting a more perfect elongation and gravitation of the abdominal viscera.

But what are the natural effects of this new relation? We find that the patient complains of grinding pain, and weakness in the lumbar region, from tension or irritation of the broad ligaments. She complains of dragging pains in the groins, from tension of the round ligaments. She complains of burning pain in the centre of the pelvis, often by reason of the irritation of the os uteri, resting on the perineum and sacrum; there are also pains, imitative of labor, instituted by this unnatural relation. She also complains of pains in the thighs, and at times, paralysis and numbness, with edema, from pressure on the lymphatics, and intrusion on the ischiatic and femoral nerves.

But there is *another* set of functional effects of a serious character. We find that by this procidentia, the vagina is dilated, and filled with the body of the uterus; here it acts as a foreign substance, provoking leucorhea. The exhalants become relaxed and expanded by the distension, and they finally pour out one constant stream of leucorhal discharge, exhausting the powers of life; and this leucorhea, in turn, reacts, as an exciting and perpetuating cause, both of itself and of the prolapsus; and we have yet to find the case of leucorhea that has not disappeared, or declined, soon after the application of the Lacc.

But there is a still more serious set of affections accruing either from this morbid relation, or from the enervated or irritated powers of life, in the uterus. We mean a derangement of catamenia; most commonly, they are very frequent and excessive, and very often this gives rise to the most dangerous and habitual floodings, and we have never failed (except in *one* case,) to effect decided relief, with the use of judicious support. These effects also aggravate the above described abdominal symptoms, so that in general they are all classed under the head of prolapsus uteri.

But there is another interesting view of the subject. We have described the viscera, as pressed back by the abdominal muscles, keeping them in the axis of the body; of course,

thus requiring less dorsal power to sustain the body; but now, the dorsal muscles have to sustain the whole weight of the body; the viscera have left the axis, and the body bends forward and rests upon the bodies of the vertebra; the muscles become fatigued and relaxed; some tenderness of the vertebra comes on, with great weakness: this is particularly the case in the latter stage of primary spinal irritation, when the acute symptoms are relieved; the muscles then want exercise and support only, to complete the cure; and be it remembered, that many supposed cases of spinal irritation are not primary, but are only muscular weakness.

Many things are to be learned by this relation. 1st. That prolapsus is not occasioned by a debility of the uterine, or visceral ligaments; but from torpor of the abdominal muscles. 2d. That internal remedies, in general, cannot remove the cause of uterine debility. 3d. That pessarys tend to destroy the elasticity of the vagina, it being the natural support of the womb. 4th. That they are a prolific source of leucorhea, and its perpetuity. 5th. That their use is not pathological or philosophical.

We next proceed to consider the natural effects of relaxation, on the *pectoral* contents.

It will be borne in mind that we have represented the heart as being partly suspended by its ligaments and vessels, and partly supported by the pericardium and diaphragm, when in their proper condition.

It will now appear obvious that from a relaxation of the abdominal muscles, the diaphragm will be *inverted* to some extent at least; of course depriving the heart of a part of its support, leaving it more perfectly suspended by its vessels and ligaments. We take it for granted that this will be considered as an unnatural and unfavorable position for an organ of such activity, weight and size; and *especially*, seeing that its function is one of so much importance, and that it is so necessary that it should be performed with the most perfect uniformity and equanimity. It is very natural to suppose that that organ would be detrimentally affected by such an unnatural state of things. The nerves of organic life, presiding over functional action, will very soon feel offended by this position of things; the consequence of which will be, that an accelerated and irregular action will ensue, the order of life being changed; this state of things is called palpitation. This affection (if continued,) produces a complicated and formidable set of affections, in the following order and manner, to wit: the force of the circulation is

increased; there is a beating of the coritigs, and a particular determination to the head, occasioning vertigo, ringing of the ears, and confusion of ideas; especially are these felt on stooping, reaching, or taking *any* exercise. These are accompanied with the whole train of symptoms and phenomena attached to Hysteria—including gloom, desponding, lowness of spirits, irritability of temper, &c.; this is manifested more commonly in the case of females who are laboring under most of the previously described symptoms; making up a very unhappy and unfortunate subject.

In addition to these, there is a set of organic, local affections, of a serious character, that may be traced to *this* cause, for their origin and perpetuity.

We have attempted to show that *muscular relaxation* will give rise to increased action in the fibre of the heart, consequently giving rise to hypertrophy of the ventricles; the effect of engorgement and the stimulus of exertion, as in the case of the arm of the blacksmith. Another effect may be, an ossification of the valves of the auricles and ventricles, inducing pulmonary affections in a mechanical way. For instance, the left auricle may refuse to admit the blood, on its return to it from the lungs, occasioning a consequent engorgement *in* them, with all its natural and attendant consequences; these pulmonary effects may, in their turn, react on the heart, and thus prove one perpetuating cause of the palpitation.

We now inquire whether it does not appear possible, and even rational, that a radical deficit in the abdominal muscles, may produce an extended train of effects on the heart, and on the lungs through it; and also on the brain, in all the ordinary nervous affections that harass the human race. We also ask if it is not even the most probable cause of the chronic ailments of the trunk? and the one that should receive the first attention, before we grope into the more uncertain paths of hypothesis on the vital action.

We now proceed to consider the extended and natural effects of muscular relaxation on the pulmonary tissue and function; and be it borne in mind, that we are considering the matter in a *mechanical* light, just as we would enter into an investigation of any or all of the actions and effects of a complicated machine; and whatever vital or sympathetic effects are developed, will be but the effects of either a healthy or morbid mechanical relation.

In order to fully appreciate and comprehend us in this period of the subject, it will be absolutely essential to call

to mind all of our anatomical remarks and relations, as we have advanced them; more particularly *this*, to wit: that the abdominal contents are designed to sustain the diaphragm, rather than them to be sustained by it; also, that when this organ is properly sustained, it is raised so high as actually to compress the collapsed lung, thus perfectly filling the pectoral cavity at all times; and that this throws every organ, from the uterus to the larynx, into perfect apposition; and that this relation is the *only* one that can be called natural, and depended on, to ensure the healthful developement of every function.

Suppose there is a morbid relaxation of the abdominal muscles, producing the above described effects on the viscera, from the anus to the diaphragm; what are the natural effects that may be expected? Let us see. We left the liver, stomach, and spleen in a pendant condition from the diaphragm, and as we previously showed, *it* is incapable of exerting suspensary power; of course it will be permanently inverted or lowered, occupying a straight line in an oblique direction, rather than a concave and curvilinear one. The immediate consequence of which is, that the pectoral cavity will be enlarged, the proximity of the diaphragm and lungs destroyed, and the stimulus of pressure from below removed. Furthermore, the pleura is placed in much the same condition as the peritoneum is, to wit: in an unnatural and extended position, a state which so delicate and irritable an organ is illy calculated to endure with impunity; thus constantly disposing it to unnatural susceptibility, inducing primary and reflected sub-acute pleuritis.

Another unavoidable conclusion is, that in this position of things the mediastinum is put upon the stretch, or at least placed in a very new and unfavorable condition, exercising the function of a suspensor, as well as that of separation between the lungs; of course it will not be expected that this organ will suffer this with impunity, and the query now is, what will be the vital infringement on this organ? We take it to be this; that as congestion is so peculiar to all portions of serous membranes, this condition will increase its irritability, and invite, on slight causes, an undue proportion of blood to it, accounting for that deep seated sense of heat and soreness of the centre of the breast; also this mechanical influence will produce a sense of weight, or weakness, or tightness in the breast, which is so commonly referred to the pit of the stomach, and so uniformly accompanies phthisis, bronchitis and dyspepsy; causing the patient

often to speak of the tightness of the chest, and difficulty of standing erect; and *hence* the sinking or retraction at the scrobiculis cordis, in most pulmonary and dyspeptic patients, and hence also is explained the apparent and perplexing similarity between the various grades of phthisis and dyspepsy, showing that they are closely allied in nature, and are cause and effect.

Another mechanical effect, through the medium of the mediastinum and the specific gravity of the lungs, has reference to the larynx. The nerves of organic life will soon become sensible of the new and unnatural position of things; of course its irritability will be increased, its tone destroyed, and the organ exposed to any affection that the force of circumstances may dispose it to,—as ulceration, congestion, and so on.

But we now proceed to the more important effects upon the substance of the lungs, in both a mechanical and vital point of view.

We last spoke of the partial inversion of the diaphragm; of course it will be immediately seen that the pectoral cavity will be enlarged, and that the substance of the lungs will occupy a new relation to the surrounding parts; there will be a vacuum or space between the diaphragm and lungs, or, to say the least, there will not be that usual support, and stimulus of contact, that is necessary; consequently, the mechanism and functions of respiration will be interrupted in the following manner.

Here it will be necessary, in order to be the more readily comprehended, to give our philosophy of both inspiration and expiration. It appears that inspiration is the first token of independent life—by which the creature lives independently of maternal invigoration; and hence it is the first effort of nature that is the result of birth, and that without it every other human phenomena will fail to succeed. And we do most emphatically inquire of every intelligent mind, if the foregoing fact or coincidence does not imply, or more than intimate, that whatever infringes in the *least* on inspiration, will act like the withering sun on the mown grass, in regard to every vital action of the system. By the coincidence, we mean that inspiration is the first action of independent life, and probably about the last action performed at death, and just in proportion as we enjoy it, we live, and without it, in the same ratio, we die. By this, it will be seen, that all (or nearly so,) cases of difficult respiration are founded in difficult or incomplete inhalation. But to return

to the physiology of inspiration. We say that previous to inspiration, the lungs are collapsed, yet completely filling the pectoral cavity, by the diaphragm being crowded against them by the abdominal viscera. This is the case at birth. When the healthy child is propelled into this world, if he stay, he must breathe. Hence the Divine author has inspired every member of the body with the instinctive, or rather inherent ability and disposition to act up to their design.—Hence, (perhaps partly through the influence of atmospheric pressure,) the intercostal, and other pectoral muscles, contract; in so doing, they elevate the ribs and shoulders, of course, expand the chest, thus forming a small vacuum, increasing the force of atmospheric pressure; from the same cause that actuated the other muscles, the diaphragm is induced to shorten *its* fibres; of course, in so doing, it will bring its broad concave face in the form of an extended sheet across the trunk. This will increase the vacuum in the chest, and enhance the power of atmospheric pressure; the consequence is, that the lungs will be immediately inflated, until they again feel the comfortable sense of pressure on the costal and diaphragmatic boundary, when a reacting and antagonizing power is called into action, and produces expiration. And as this is the most natural and proper place, we here proceed to give our view of the physiology of expiration. This will bring into practical requisition our physiology of the abdominal muscles.

We now have the lungs inflated with atmospheric air, and the pulmonary vessels well dilated, for the free ingress of the blood to the air cells, sent by the right ventricle for purification; this is now performed by the exchange of carbon for oxygen. Of course, the next step is, to send this blood (which has passed into the pulmonary veins,) back to the heart, for distribution, and to dispose of the impure atmosphere now in the lungs, and obtain a new supply. Now how are these two objects to be accomplished? We answer in the following manner. The pectoral muscles are to contract, and the vacuum within, being destroyed by inflation, and the elasticity of texture in the abdominal muscles having become impatient, as it were, being distended beyond their given dimensions, together with the involuntary elasticity of the ribs and cartilages, all at hand unite, and by combined and concentrated force close in upon the lungs from around and below, and expel the air; while the lungs are as passive as the cavity of a bellows, the ribs being the cheeks, and the abdominal muscles the handle. By this means, the

diaphragm is passively pushed back to its proper and original position, the fibres again put upon the stretch, which will act as a natural stimulus to another contraction, and so the whole respiratory apparatus is again ready for another inspiration. Thus the impure atmosphere is disposed of; but what has become of the blood that was to be sent back to the heart? We say, in few words, that by the passive contraction of the lung, through the combined power referred to, the pulmonary veins were diminished in calibre by compression, and the blood was thus propelled into the left auricle.

Thus we have the physiology of respiration, and the *modus operandi* of its use and effects, as performed by a well balanced system, and we will now be prepared to place an intelligent estimate on an aberration of this function, produced by muscular relaxation.

We see that the inherent and voluntary contraction of the abdominal muscles is lost; consequently, by this relaxation, both inspiration and expiration are greatly impeded, to the cost of the system. For instance.—Inspiration will be imperfect, not having the exciting stimulus of diaphragmatic support to dictate and invite a natural inflation, because the diaphragm will already have receded from the lungs, and so far, too, as to not press firmly on the lung when inflated; hence the patient cannot get the satisfying sense of a full inspiration, or getting the catch, as many term it; this inflation not distending the muscles much, of course, *they* will not react and expel the air by the pressure of the diaphragm. The consequence of this will be, that there will ensue both imperfect inflation and expiration; of course, panting, or general difficulty of breathing will be the inevitable consequence; and on taking observation, it will be found that the abdomen does not rise and fall as freely as is usual in the healthy subject; but that the breathing will be hurried, and performed wholly by the use of the intercostals and the *sterno costalis* muscles; it will also be observed that the inferior portion of the chest will not expand as usual. For an exemplification of what we mean, see those ladies who are in the suicidal practice of tight lacing—also those who are in the latter stages of consumption.

We have now shown, in an indirect way, that this state of affairs will produce an imperfect supply of pure air, and an imperfect exit of the impure air; of course, just in proportion as this does obtain, so may we expect the various grades of anhelation. But the more common development of this is in a more moderate degree; imperceptibly creeping on, and

doing its constitutional work full well, before the patient's attention is called to the matter.

But again, there is another and very important effect that is an inevitable consequence of the foregoing facts, and this, too, on mechanical principles. It has reference to the pulmonary circulation. We attempted to show that it was the full inflation of the minute air cells that expanded the calibre of the pulmonary arteries, but particularly their minutest extremities, and facilitated two things, to wit: the rapid and free passage of blood through them, and the perfect presentation of this blood to the fresh atmosphere. We also showed that expiration compressed these muscles, and impelled this blood back to the left auricle. But now the order is changed, in consequence of imperfect inflation; there is imperfect arterial expansion, and also imperfect presentation of blood for purification. By this, two sets of effects will ensue. First, an arterial engorgement of the lungs, in consequence of the slow passage of the blood—giving rise frequently, to tenderness in the breast, also tending to hepatisation, or consolidation of the lung. There will be a sensation of dead weight in the breast, a dull pain, and occasional sub-acute inflammation, till there is finally disorganization, by tubercles, or suppuration. The second effect is, the system becomes impoverished, by innutritious and carbonized blood, giving a whiteness, or pale leaden hue to the body generally, and a lividity of the countenance, lips and ears.

We have now gone a desultory round of mechanical physiology, in some of its bearings, not with a view to say all that might be said, but to inquire if something similar might not be said, and practised upon. Have you detected the place where we have erred in anatomical, physiological or pathological truth? And, strange as our views are, have we not kept our eye on the mark, and hewn to the line of philosophy, in an inductive manner that would be justified in reasoning upon matter and phenomena, in any other form or situation? If we have, then, unless the human system is proved to be an exception to the laws that govern matter, we think that our inferences will be judged by all, to be of immense importance to the faculty, and to the afflicted.

But if the principle, on which these remarks are founded, is a true one, then we are *forced* to say that we have now an explanation of our universal ill success in the treatment of Consumption, Dyspepsy, Prolapsus, and most other chronic affections: and for this plain reason, to wit: that they

have mechanical and organic causes, viz: mal-position, and mechanical infringement, or negative defect; consequently, they are not under the cognizance of medicine, but rather of the laws of life and of revelation, and the adjustment of the relative position of the organs.

There is one important subject that we have forgotten to consider. We refer to the function of vocality, the consideration of which explains the cause, perpetuity, and cure of common chronic bronchitis, or the throat complaint of public speakers; also, the reason of the frequent debility of speakers, who have actually sound lungs, and no necessary impediment to any amount of vocal exercise.

In order to comprehend this subject, it is necessary to bear in mind that every vocal sound, as speaking, hallooing, laughing, or blowing on wind instruments, is but one variety of expirations, under an infinite number of modifications and circumstances, performed by the same organs as moderate expiration in breathing. Consequently, we have only to study the law or power that affords this variety of sound, and understand the philosophy of sound, to arrive at the point at once.

It will be conceded by this time, that the abdominal muscles are the true respiratory levers; but designed more especially, to preside in the different grades of vocality. It will also be conceded, that, in general, it requires more force to speak, than to breathe; of course, then, if the pectoral apparatus is insufficient for all *respiratory* operations, the labor of vocality will devolve on the abdominal muscles.

Here, we have the secret of the throat complaint of public speakers, and of common chronic bronchitis; for it is notorious, that but few adults either breathe or speak from this source; but rather by bending forward, depressing the shoulders, and contracting the chest, especially in passionate speaking, thus pressing the air out with a convulsive velocity by surrounding pressure, rather than by the more natural, direct, and gentle force of the diaphragm below, in a straight line. By this morbid and unnatural method of expiring, we see how lungs of a strumous predisposition, will be liable to injury, or rupture of some portion of their tissue, or to a perpetuation of any previous lesion. And why is it so? The answer is, because, that when any body is to be propelled, either with facility or force, it is a known law that the force should be applied in a direct line; else, it both requires more force to move it, and the motion produced, will be an indirect one,—going on a medium line between the direct one and that in which the force came.

Now, the direction in which the air is to be forcibly, but gently expelled, is as near in a direct line as possible, viz: from the diaphragm to the mouth, *it* being a little elevated, particularly in public speaking.

But how different from this philosophical order, is the expiration of pulmonics and dyspeptics performed,—viz: by contracting the chest, in lieu of expanding it; drawing down the mouth instead of elevating it; raising the larynx, in lieu of depressing it; employing the force of expulsion at right angles, rather than in a direct line; giving necessarily an oscillatory and unmechanical movement to the air,—and were there an exit like the larynx at the diaphragm, a full share of the air would be there expelled: the consequence is—that there are always harsh and husky intonations produced by those who thus speak, attended with a jarring or shaking of the breast, from centre to circumference; the air is expelled with excess, too, and with such convulsive velocity as actually to denude the bronchial membrane, inducing tenderness thereof, with hoarseness.

Now, this method of speaking is peculiar to those affected with pulmonic diseases, or dyspepsy. I mean public speakers, when they address an audience; but in common conversation their voices will be effeminate, and their sentences often terminate in a whisper—which they ascribe to a weak stomach.

Thus we see, that just at the time when the organs are least prepared for effort, they are called upon for an unnatural exertion, and that, too, at a great disadvantage, inducing and perpetuating bronchitis or soreness of the throat, as well as tending to induce hymoptosis.

It should here be observed, that those *thus* exercised will always labor under this flaccidity of the abdominal muscles which we have labored to explain, and have the apparent necessity of their speaking in the unphilosophical manner above described. Let us now take another position and method of speaking, and see how different the effects, and also see what conclusions can be drawn from it.

If we take the following posture, the above described difficulties will be relieved; showing what the science of speaking is, and consequently pointing out the principle on which diseases incident to vocality may be remedied, or prevented.

When we stand erect, and throw back the shoulders, the following are the relations that are effected. 1st. The capacity of the chest is much enlarged, especially at its inferior portion: of course, by this means there can be a greater

stock of speaking material used at each inspiration. 2d.—By this position, we involuntarily put the abdominal muscles on the stretch, consequently the diameter of the abdomen is diminished, and the viscera compressed; of course the diaphragm is supported. It will now be seen, that if there is any contraction at all of the muscles, it must act in elevating the viscera, and consequently produce expiration. By this means, if the head is properly elevated, the larynx depressed, and the mouth freely opened, the air will come in one smooth stream, in a direct line, producing clear and smooth sounds.

This system of speaking by abdominal action has restored and braced many weak lungs, revived the system by the increased proportion of oxygen there is thereby inhaled, restored the system by the free distribution of arterialized blood, and given tone to the stomach by the constant action of the firm muscles on the abdominal contents.

Now if our remarks are in accordance with mechanical principles, and with common sense, to what conclusions will they lead us? We have summed them up as follows, viz:

1st. That the human system is constructed upon the sublimest principles of architecture and mechanical philosophy, and that it of course is chiefly governed and perpetuated by the laws of that science, ascribing to God the continual, invisible, and inscrutable power that propels and vitalizes it.

2d. That there is one certain construction and relation throughout, that constitutes health, and but one: of course, that every degree and variety of departure from this mutual relation, constitutes, and institutes, disease.

3d. That the composition and structure of the system is such as tends to destroy this relation, and that the law of gravitation is the most natural and obvious power, that tends to break this mutual bearing.

4th. That the abdominal muscles appear to be the grand supporting and binding link to the organs and functions of the three cavities of the trunk, and that the abdominal cavity performs a complicated and vital set of functions, that elevates them in importance, if possible, above the other two cavities.

5th. That a morbid relaxation of these muscles is the key to an extended train of maladies, that may affect every member and function of the body.

6th. That this explains the cause of the proverbial ill success of the profession, in the treatment of Consumption in its Protean shapes, Dyspepsy, Bronchitis, and Affections of the Heart, Prolapsus, Hysteria, &c.

7th. That the cause of the above affections is often mechanical, and that they must be treated by mechanical means, as they are not under the cognizance of medicine.

8th. That external support, judiciously applied, so as to preserve the diaphragm *well* sustained, is the means that promises incalculable relief to most chronic diseases, that are unmanageable by medicine.

The result of this train of reasoning — the fruits of a long practice — has been the invention of an instrument as much as possible designed *every way* to carry out the above intentions. After a description of which, we will give a list of its applications, with a correct report of the accompanying success, and offer a few practical remarks on different diseases.

Many are the instruments that have been invented for external support, but only a few of them possess very much merit; and all of them show that they were not contrived upon true physiological principles.

Among the first, is Dr. Hull's, which instrument has done much good; but I found it deficient in the three following particulars, beside some minor ones.

1st. Its force is applied only posteriorly, pressing the small intestines upon the uterus; also, by this force, with so large a pad, the capacity of the abdomen was diminished, and that, too, near the umbilical region, tending to produce sickness at the stomach, when a firm support is given.

2d I found, in emaciated patients, that the counter pressure of the back pad was too severe, producing restiveness in nearly all cases, and where they kept the recumbent posture much, deep excoriations ensued.

3d. It was too confining, also, when applied sufficiently firm to render the required support, having no elasticity but that of the main-spring. Besides these there are other objections, which are attached to all the others in common, to wit: they are heating and irritating, from their stuffing, and cannot be well worn in the recumbent posture; and that the pads are always to be worn in the same place each successive day.

Next, Dr. Chase put out one of another construction, with the same objections to it as to Dr. Hull's, excepting one thing, which is this: it places the support in an upward or elevating direction, but it is bungling and arbitrary, has too high a pad, and places most of the pressure on the linea alba, and not much on the muscular portion of the abdomen, where the actual debility lies, especially on the inguinal openings, that in all such cases are peculiarly relaxed, and disposed to hernia.

Next, is the Corset of Mrs. Betts; this is a highly useful construction, and, so far as uniform pressure is concerned on the old pathology, is good, excepting in very warm weather; but it must be remembered that it only acts in a posterior direction.

Another invention is that of Dr. Thompson. It consists simply of a front and rear pad, connected by straps. A verier bantling has never been in use. In my patients I have seen them produce almost complete strangulation by the straps on the inomenata, in order to get sufficient pressure on the front pad; for in most cases there is emaciation, raising the inomenata higher than the abdomen when it is slightly compressed.

I have used these instruments, and necessity *under* their use has compelled me to construct something better.

The instrument invented by myself, has, under my application and observation, avoided all the inconveniences of the others in use, and pretends to additional advantages, of which the afflicted are to judge, and say whether it shall take the preference in the extensive application that some like contrivance must in future take.

Its first peculiarity consists in its perfect adaptation to the body, avoiding all the ossific protuberances and surfaces. — This is accomplished by the curvilinear form of the main-spring, around the inominatum, occupying the soft space between that bone and the ribs: next, when it descends sufficiently low before and behind, it comes directly horizontally across the body, the posterior branch passing quite round the hips, so as to embrace the person and hold itself on. Its next peculiarity is its general flexibility; first on the front pad, as you see, unlike Hull's or Chase's, it is not attached to the arbitrary main-spring, but to a curved subsidiary spring, giving it an oblique, upward and backward force. Again, this gentleness and flexibility is increased by the attachment of the elliptical spring, that takes off the harshness of the main-spring, while we lose none of its power; at the same time, it has the effect of doing away with the necessity of stuffing, that heats the parts, and absorbs the salts of the skin, and soils the instrument. The next peculiarity of the front pad is, that it is narrow, and raises the abdomen but does not compress it, and that it reaches around to the relaxed muscular tissue and supports them, especially the abdominal rings; by this means, too, with the flexibility, the patients can breathe or inflate as much as they please, and the pad gives way; or they may contract, and the pad immediately follows up, with one steady force. Another advantage is, that

placed on these springs it has that oscillating movement that imitates the healthy kneading of the abdominal muscles. Let it be remembered, that all this time the main-spring sits like a saddle, not moving at all.

The next set of advantages lie in the number, position, and flexibility of the back pads.

Dr. Hull's back pad either presses on the spine, or to one side of it, it being immovable. Dr. Chase's are each side, and immovable and arbitrary.

The Lace has the whole of the counter pressure divided between four pads, so that no one pad rests with more than one fourth the force that those do of the other instruments. Two of these pads are placed above the main-spring, like a cross, and press on the small of the back, binding the relaxed, painful, dorsal muscles to each side, instantly relieving weakness and pain; thus, by raising the patient to an erect posture, these pads can be separated or approximated, or heightened and lowered, thus at pleasure changing the seat and position, or exchanging size, as the patient may choose. It is worthy of notice, that these pads never touch the spinous processes, and are very flexible; they can also be shoved from right to left.

The next advantage lies in the two lower pads, placed on curved flexible subsidiary springs, so that they may rest on any point between the trochantre major to the centre of the spine or sacrum; but are principally designed to rest on the large belly of the gluti muscles,—they, together with the flexibility of the spring, answering the purpose of padding, or quilting. These the patient can change every day. These springs curve just enough to keep the main spring off from the body, in a uniform distance.

The next advantage lies in the perineal support, which is so constructed that it does not interfere with the evacuations of nature.

Thus you are now able to decide on the comparative merit of the instrument. The question is simply *this*,—is it well calculated to carry out the indications of cure? It has never failed in our hands.

LECTURE IV.

WE now proceed to make some practical remarks on the diagnostics and management of chronic diseases, incident to the three truncal cavities.

OF DISEASES OF THE LUNGS.

When there are evidently diseased sensations in, and disturbed functions of, the chest, the great question respecting the probability of cure resolves itself into another question, to wit: Is there, or is there not, a disorganization of any portion of the lungs, beyond incipient hepatization? If there is, either by tubercles, abscesses, or confirmed hepatization of an extensive character, then the case is likely to be hopeless, sooner or later. But if there be not, although functional derangement may have gone far, very far, yet, by proper physical treatment, applied in accordance with the indications of nature, occasionally combating concomitant and accidental symptoms of a vital and constitutional character, by appropriate internal remedies, there is hope.

If the patient complains of pains, either dull, sharp, dead, or wandering, in the chest, with a sense of tightness or stricture, as though he was breathing through something, he should be directed to draw as long a breath as is possible for him to do, and if he make but a feeble effort, and do not inhale 52 cubic inches of air, his lungs should be examined by percussion, and that too in a horizontal posture. But if he can make repeated, long, and full inspirations, either lying or standing, the whole circumference of the abdomen expanding freely and uniformly, then there is, as yet, no fatal disorganization of the lung. He should first make the experiment in the upright posture, and if he succeeds, well; if not, he should try it in the horizontal posture, and if he then succeed, well; but if not, then the *abdomen* should be examined, and if found relaxed and flabby, and not round and firm, it should be thoroughly held up by pressing at its bottom with the flat of the curved hand, raising it efficiently upward and backward; if he then can breathe much fuller, then the lungs either are not at all, or much affected, in an organic point of view. If the patient complains of dyspepsy, or a sensation of sinking at the stomach, pain or weight there, shortness of

breath, disposition to sit crooked, with a retraction at the stomach, (in connexion with the ability to draw a full breath lying down,) the symptoms are either the vital or mechanical effects, produced by mechanical causes, i. e. the gravitation of the abdominal contents, producing the effects complained of in the manner described in our pathology, that the lungs may be cured by physical means.

Now what are the indications of cure? We answer, that they are found in the pathological state, of the chest first, and next that of the other two cavities.

We find the patient with a flaccid abdomen; retracted, sunken stomach; a disposition to walk and sit crooked, or bent forward. The chest is then much contracted in its inferior region, where and when it should be most expanded. The lungs are permanently compressed to a greater or less extent. By this means, the arteries and veins are compressed; the arterial and venous circulation interrupted in the lungs, inducing congestion, tenderness, and pain, with sense of stuffiness, as some express it. The blood by this means is not fully purified, by oxygen received or carbon thrown off; thus impoverishing the system, and by degrees doing the fatal work. The lungs in this state are like our other organs that lose their exercise, they become relaxed and torpid, the cells tend to agglutinate together, by lymph secreted, and a whole set of fatal effects will finally accrue, notwithstanding the cause is only a breach of the natural bearing of all the trunclal organs. These effects may go so far as to exist and proceed independently of the cause, and then they both go on together, and come to a fatal issue.

By this time common sense is prepared to point to the rational means of cure, viz: — First, place and keep the patient in that position of body that is indicated, by artificial helps to the back and abdomen, or without them, as soon as the patient can cultivate the habit of keeping the proper posture. Let him sit and walk perfectly erect, let him hold the head well up, let him throw back the shoulders thoroughly, and place upon him a patent Lace to keep the lungs well supported. If there continue pains and a sense of tightness in the breast, and some tenderness, then let him daily be well brushed and make gentle percussion with the open hand, as he can bear it; increasing as the tenderness subsides, until he is able to strike with force. But let him not begin so harshly as to excite inflammation, but be cautious and watch the effect. The next, and last thing to be attended to is, to restore a healthy and full respiration; opening every cell and

expanding the arteries and veins. This is only to be done by the exercise of respiration itself; daily and constantly cultivating the habit of inhaling the longest and fullest breath that he can, in a recumbent posture, and exhaling as slowly as is possible. By this means the lungs will be strengthened, the cells reopened, and the whole chest finally expanded. Let him be prudent in body and in habit, and he will improve. But is there no relief for those whose lungs are *disorganized* to some extent? We say there is. Apply the same measures, for the same complicated state of mechanical affections exists in the incurable as in the curable cases, which aggravate the symptoms and oppress the feeble powers of life.

OF CHRONIC BRONCHITIS.

The following cases are very interesting and instructive, and confirmatory of our views on diseases of the trunk generally, and more especially of the chest.

Miss I. came home from the South laboring under the following symptoms, viz: daily hymoptosis, pain in the chest, and palpitation of the heart, distressing weakness in the stomach and breast, sense of tightness there, with difficulty of breathing, inability to sit or stand erect, sensation of dragging from the centre of the breast to the umbilicus, pain in the left side, dead weight in the inferior abdomen, dragging in the groins, pains in the limbs, and inability to take either carriage or foot exercise, with fainting, disturbance of mind, and great gloom; she had cough, an excessive leucorhea also attended her other symptoms. The Lacc was applied, and in one instant she said that she felt better: but in four days, she was so *much* better as to walk freely and ride with comfort; her spirits returned, and in a word she said that she was better every way. For four days after the application, she had not an appearance of the hymoptosis, which afterward returned to some extent. A long time after this, I saw her Physician, Dr. Gazzam, and was informed, that she bid fair to ultimately recover.

Case 2. — Mrs. H., married, aged 45, had for 12 years been supposed to be in a consumption, and yearly would seem to be taken nearly off by it. She had every feeling that could be attached to a mechanical derangement of the truncal viscera, she complained of very oppressive sensations in the breast, pains, dead and sharp, fixed and wandering, complained much of a sense of tightness in the region of the mediastinum or centre of the breast, which disabled her from sitting erect; she had palpitation of the heart on the slightest

causes, difficulty of respiration, from a sense of pulling and smothering; she labored under occasional cough, her shoulders were humped, or drooped forward, spine curved, and the stomach was much retracted: she also had every variety of dyspeptic symptoms, her stomach was very irritable and tender, appetite was very capricious, and powers of digestion weak; she labored under pains in the side, great sensation of sinking in the region of the stomach; there were bearing down pains, dragging in the groins, weight and enlargement at the bottom of the belly, with great relaxation, and flaccidity of the whole abdomen; she labored also under great pain and weakness in the back: there was remarkable weakness in the hips, she felt as though they would come apart if she did not move with care; there was pain in her limbs, with numbness, loss of motion, and inability to walk but a few rods at a time. In this situation I applied the Lacc: she soon said she felt supported, and shortly began to speak of unexpected relief in the breast and stomach; she said her unpleasant sense of pulling and tightness, with difficulty of breathing, were all gone; said her *stomach* felt better, that her hips did not now feel as though they would come apart, she felt like moving as freely as when a girl, could walk up hill, her spirits were improved, she was able to engage in her domestic duties with ease and cheerfulness.

This lady's friends had no other idea than that she must be laboring under pulmonary disease.

Many other cases might be cited, to show that either a cure or relief will be uniformly experienced in the above described affections of the lungs and heart, but we content ourselves with two more cases. These patients complained much of pain and weakness in the breast, difficulty in respiring freely, had some palpitation of the breast, complained of that sensation of pulling in the centre of the breast and pit of the stomach, (which all my patients have done,) producing a constant disposition to sit bent forward; they had some symptoms of prolapsus of the uterus, particularly the cerebral irritation, which is so common, as ringing in the ears, dizziness in the head, especially, on reaching or stooping. On directing them to inhale as fully as possible, I think they did not inhale over 12 cubic inches, in lieu of 52, the proper amount. At this I was alarmed, and decided on a auscultation, and while one of them was in the recumbent position, on placing my ear to the chest I found she could inhale freely, inflate every proportion of the lungs and distend the abdo-

men and chest uniformly, which she said she always did in the lying posture; but on sitting up, the sense of tightness or pulling beset her. The Lace was applied to these ladies, enjoining them to lace around the waist none, and always to sit and stand erect, with the shoulders well thrown back and the mouth elevated when engaged in conversation; they also were to use the flesh brush freely, and to knead the abdomen freely, — first in a downward and then an upward direction; they also were to pat the breast with the hand, at first gently, increasing as they could bear it, till they could do it with great force. These patients are now able to breathe freely, pains nearly gone, are able to sit erect, and take any amount of exercise with pleasure and profit.

These cases have been cited for the particular purpose of demonstrating the influence of the abdominal muscles on the chest, in health, and in disease; showing that not near all who have apparently a full set of consumptive symptoms, have *got* the consumption, or *any* disease of the lungs, in an organic or primary point of view. Our object was also to show, that these cases of apparent consumption, do proceed from an oppressed state of the lungs, from the gravitation of the abdominal contents, mechanically impeding the vital and mechanical function of inspiration. We also designed to demonstrate, that they were *curable* by the simplest means, and they of a physical character. But these cases also demonstrated the mechanical origin, and mechanical cure of Dyspepsy and Prolapsus, with Leucorhea.

You are now prepared to see what course should be pursued by the physician or the patient himself, when he begins to feel indications of disease about the lungs or heart. As a general rule, rest assured, that the effects are only the want of action in the organs themselves, or that they depend on mal-position of the truneal organs; and that to *this* should be turned their first inquiry; and prompt, physical, natural and rational treatment, on philosophical principles, should be applied. But if you in your judgment, have reason to fear organic and primary derangement, you must turn your course, and do the best you can; but don't do too much, look well to the spine, attend to the position, use gentle means, regulate the secretions, and leave your case with the great physician to manage.

OF AFFECTIONS OF THE ABDOMEN.

Dyspepsy, among the group of abdominal diseases, seems to stand forth as chief of all, and capable of monopolizing every symptom of abdominal disease to itself. We shall therefore generalize all the abdominal effects of relaxation of the abdominal muscles, as arising under one head, and requiring very similar treatment.

Now what is the pathological condition of the dyspeptic? Let us see. He complains of tenderness of the abdomen often, with swelling or bloating in the lower belly, from the intestines lying on the floor of the abdomen, or brim of the pelvis; here they lie, like inactive matter and a dead weight, having the benefit of no muscular elasticity to rest upon, and act like a spring board, in jolting or jarring. Hence why these patients so often place their hand to the abdomen to imitate the muscles in elevating the abdominal contents; they also feel more or less pain in one or both sides, supposed to proceed from functional derangement of the spleen and liver. This may be; but oftener proceeds from the fact, that these muscles are relaxed, the intestines descended, and are dragging along the stomach, liver and spleen; or, to say the least, they are no longer supported, and of course are left to the influence of their own specific gravity; thereby putting the visceral ligaments upon the stretch. By this means, two sets of effects often ensue: 1st. Pain and weight on the visceral ligaments, producing all the mechanical effects that one would naturally conceive of, in this deranged and unfavorable relation. 2d. There may ensue functional derangement in the Liver, and it may coöperate with the mechanical derangement, to wit: there may ensue organic torpor, inducing want of biliary secretion: or there may be visceral engorgement of bile; both caused by want of the natural, necessary, and accustomed pressure of the viscera and walls on all points, to stimulate the organ and press along the accumulation of biliary secretion. All of these symptoms, in a vast majority of cases, will be relieved by replacing the organs in situ, and by restoring a general tone to the muscular fibre through the proper medium, i. e. their natural exercise. But of what else does the patient complain? He complains of tenderness, or else loss of sensibility of the stomach, and is generally afflicted with either a sour or alkaline stomach; he will have a capacious, gnawing appetite, or perhaps no appetite at all; if he eats, he generally spits it up, or is distressed with its presence on

his stomach, feeling that there is a weight, or load there, generally wishing that he had not eaten; he also feels a distressing sensation of either distension or sinking in the stomach, there being a retraction or actual sinking in that region. Now what is the pathology of these symptoms, and the indications of cure? We say, that *common* sense indicates the following to be the rationale of the whole set of symptoms. The abdominal muscles have ceased to perform their proper functions, the intestines have descended, dragging along the stomach, or leaving it to the influence of its own weight; the diaphragm being unable to sustain this weight, descends also; thus there is a total change of relation and condition, to wit: not one truncl organ will be pressed and supported, whereas, they all should be, and are, in the primitive arrangement. Again, in addition to their loss of position and support, they actually are suspended. This being a fact, we at once see, according to our introductory position, that but one original relation will facilitate the development of healthy vital functions; so of course in *this* case, the nerves of organic life become irritated or exhausted, and act with a morbid excitement. Constipation of the bowels ensues, just as the other organs have been deranged; they lie inactive, and not acted upon. This condition is contrary to every law of nature, and their vital power wanes.

The following cases illustrate the influence of abdominal support on this set of symptoms. Mr. C., a gentleman of talents, who had led wholly a literary life, had been a dyspeptic from his boyhood. Suffice it to say, that he had every variety of feeling and effect that is peculiar to a dyspeptic. He relinquished a lucrative business and honorable post, and was in every way misanthropic and unhappy. On applying the Lace, he instantly said that he was better; in one day his spirits changed, and, unconsciously to himself, he became more pleasant. He was absent on business for some weeks: he returned, improved every way; said he could now take exercise freely, and be fatigued only in his limbs: the tympanitic swelling was gone, and the tenderness was gone, his back was stronger, and he said that it was invaluable to him.

Case 2. Mrs. Irving, aged 45, married; had been ill of dyspepsy for 18 months, had some symptoms of prolapsus, but complained especially of gastric difficulties, very constant grinding and insupportable weight in the stomach; after eating, complained of distressing sense of sinking in

the stomach, and disposition to lean forward when standing or sitting; especially after eating was she compelled to immediately take the lying posture, on account of a distressing sense of weight in the region of the stomach, and sense of sinking or vacancy there; it seemed that every thing in the abdomen had fallen, and was dragging the lungs after them; she complained, mean time, of sensations of pulling in the centre of the breast, and pain in different parts of it; she never sat erect, because it occasioned such a sensation of pulling in the breast and stomach, which distressed her. She informed me, that for the last six months she had been unable to converse audibly; while in the erect posture, said she had no comfort; her spirits were very much depressed, the senses were easily deranged, and on the whole she made up a most miserable and unhappy subject. This lady's abdomen was very flaccid indeed, and the largest in the hypogastric region, from the actual descent of the intestines; there was a considerable retraction at the stomach, on account of the descended and suspended state of those organs. She had suffered much from many physicians, but "rather grew worse." They had treated her for dyspepsy principally; they had applied the ordinary treatment as laid down by authors for this complaint, and judiciously, too, so far as I could judge. By this time she had become disgusted with the profession. On examination, I could detect no primary disease of any of the viscera, but found a remarkable flaccidity of the abdomen, and a total derangement of the mechanical relations, or natural bearing of the organs of the three cavities. I gave no medicine, but applied a Lacc; she instantly rose from the bed, and said, before she was perfectly erect, "I feel better in my stomach." She walked firmly to the fire, and conversed animatedly for about three quarters of an hour, which she could not previously have possibly done. She afterward never experienced any of her former difficulties; the chest, abdomen, and pelvis were all relieved, and she went on gradually to improve, and the last I heard of her she was convalescent. Other cases might be cited, to corroborate what we have said, but we deem it inexpedient to detail them here. And, respecting the cases reported, we will here add, that we have never failed in our application, and that we will feel bound to report any *unfavorable* cases if they should occur. In connection with the Lacc, and the restoration of the normal relations by it, the next step is, to so invigorate the several powers and organs concerned, as

to enable them to resume their former wonted action and tone, which will, with care and perseverance on the part of the patient, enable him to live on his own vigor, and gradually lay by his mechanical support. The steps calculated to effect this very desirable object, may be divided into the internal and external measures, of which, however, the external are all important, and should be commenced upon instanter. The patient, after the application of the Lacc, should immediately begin to knead and champoo his abdomen upward and downward, and increase the kneading and friction as he can bear it; he should use the flesh brush daily; he should never sit crooked, nor walk thus; his shoulders should be thrown back, his chest shoved out, and his head elevated. This posture he should cultivate, till it become habitual. If he find difficulty in doing it, then he must set apart half an hour, morning and evening, when he will attend to it, and increase the length of time as he is able. He should also be in the habit of striking the chest with the open hand, as he can bear it, and increase until he can beat the chest with great force for some time. He should also daily, morning and evening, either saw or chop wood, or use the spade for half an hour, briskly.

The internal means have more reference to food and drink than to medicines. Be prudent in quantity always; be regular also in the hours of eating; watch closely what sits well, and use it; and what does not, avoid it with decision of character. As a general rule, mutton chop is the best meat, and an alternation of coarse wheat, rye, and corn, singly, or in admixture, will constitute the best bread. The use of tobacco should be decidedly avoided; also tea and coffee. Let all he eats be simple, but nourishing, and easy of digestion. If the patient persevere in this course, and watch his own case with self command, he will regain his health, and enjoy the blessings of society.

OF STRANGUARY.

It is very common for patients to complain that they are unable to retain their urine as usual; and also that at times they are unable to pass it; this is particularly the case in ladies laboring under prolapsus, or pregnancy. If she be pregnant, there is no question as to the cause of the difficulty, or the indications of relief; i. e. the incontinence arises from constant pressure on the body of the bladder, thereby compressing it, and reducing its capacity for retaining any quantity of that fluid. In the retention of urine, it

is caused by the abdominal contents pressing on the bladder and womb, pushing them down, forming an acute angle in the neck of the bladder; thus mechanically obstructing the passage of that fluid. If the patient be not pregnant, and the same phenomena obtain, it will be by the same process, but without the interference of the weight of a child in utero. Yet the intestines will so descend as to displace the uterus, and, as circumstances may be, will produce varying degrees of urinal difficulty. In both cases the indications of cure are the same. First, apply a Lace. Secondly, put vigorously into practice the physical treatment laid down for dyspepsy, provided the patient be not pregnant.

OF THE PILES.

This troublesome complaint may proceed from either constitutional or vital causes, or it may, as it does commonly, depend on a breach of the mechanical relations of the organs of the trunk. It is very commonly connected with all the varieties of dyspepsy, and constipation. Our view of the pathology of this disease was glanced at in our physiological remarks. Now what is the general condition of a patient laboring under piles. We find the following description to be correct, as a general rule.

He is usually costive, if not dyspeptic; and if dyspeptic, there will be pretty uniform gravitation in all the abdominal organs. These organs tend to rest upon the descending bowel, at the brim of the pelvis, and thus prevent the descent of the faeces, thus causing a retention of fecal contents there, that accumulates, dries, becomes hard, and absorbs the natural fluids of the bowel; irritates the mucous coat, and invites an undue quantity of blood there. Now, this mass must eventually be thrown off, and that, too, by great force and straining, unfolding the plica, or folds of the bowel, and shoving the internal membrane along, mechanically producing Piles, if this state is continued long. Now, what are the indications of cure? We say that they are as follows. Apply a Lace; it will actually take the weight of the abdominal mass off the colon. Secondly, it will actually raise it up, and draw it back to its position. By this means, the mechanical causes are removed, and the bowel left to its resources; also, by this means, the patient will be improved in general tone, as he will, in conjunction with the use of the Lace, take proper exercise, and apply the whole of the treatment previously laid down for dyspepsy and pulmonary derangements. We have never known a case

fail of immediate relief, when the course as here presented, was properly applied. We will cite only one case for the present. Dr. C., a physician, who had lost his health by repeated attacks of spasmodic cholera, of the severest character, became so infirm that he declined business; he became bowed forward, like an *old* man, complained of great weakness at the stomach, and sense of sinking, attended with those sensations in the breast that have been previously described. His stomach was contracted, and the body was the smallest at the waist, and the abdomen much the largest, and very ponderous in the hypogastrium. He said that he was a *broken down* man; he suffered much with the Piles. He applied the Lacc, and was immediately able to perform a hard half day's riding, and felt invigorated by the exercise at night. He called in particularly to inform me, that the Piles, which had for six months sorely afflicted him, were instantly relieved; and in six months after, he informed me that they never again made their appearance.

OF PROLAPSUS UTERI.

The treatment and cure of this malady and its effects, are second in importance to the treatment of no other malady, — seeing that the time has come when a majority of the best half of the world, down to the young and chaste girl, are afflicted with this destroyer of individual and social comfort, and which, if not arrested, lays the foundation of serious and even fatal pulmonary and abdominal disease. The peculiar manner in which this disease is interwoven with diseases of the head, heart, lungs, and abdominal viscera, and identified with them, either as an effect, cause, or symptom, no doubt has been noticed, as we have progressed with this work; therefore, in describing this complaint, these remote effects should be kept in mind, although we may not speak of them. Also, in pointing out the nature of this affliction, the extensive connection of causes and effects must be kept in view, in the light of common sense and mechanical principles.

Before proceeding to speak of the treatment of this protæa complaint, let me refer you to my anatomical and physiological remarks on the pelvic contents; particularly of the very small size of this hollow organ; also of the five different supports to sustain it. You will recollect that this organ enjoys more support than is provided for the liver, an organ of twenty times its weight. You will recollect that this great strength is designed by nature to assist in sustaining

the abdominal contents and the weight of the womb in the four first months of pregnancy. Of course you conclude that the cause of the falling was pressure above, and not want of original power to sustain the uterus. Of course, then, we conclude that support applied below did not apply to the cause, and was neither philosophical, physiological, pathological, successful, or decent. Therefore you are prepared to see that we advise all such patients to apply a Lace, and thus take off all pressure from the womb, leaving it to rise by the returning strength of the relieved uterine supports.

Here we have come to a controverted point, and the controversy lies between the comparative curative merit of the pessary and external support.

We will give our treatment of this complaint, and then attend to the objections urged against it.

In every complication, variety, or degree of this disease, we advise the immediate judicious application of the Lace, with a strength suited to the peculiarity of the patient. Let it fit neatly, and feel perfectly comfortable, or else exchange it for another. Be careful not to wear it too long on its first application, or you may become irritated, made sore and restive, especially if there be tenderness of the abdomen; use at first a gentle instrument, and at intervals, and by prudence, and the use of the Lace and the following means, the patient will recover health and spirits. As there will generally be manifest a diseased condition of the chest and abdomen, as well as of the pelvis, it will be requisite for her to use faithfully the means laid down for their relief, viz: She must be in the daily habit of brushing the abdomen and back thoroughly. Let her knead the abdomen in an upward direction, increasing the force as she can bear it. Let her commence taking moderate exercise in a carriage, and increase in activity as the powers of life arise. Let her cultivate the habit of constantly sitting erect, and throwing back her shoulders. Never have her lace her waist at all. Let her rise early and take the air, and to retire early will be of advantage, and if she can obtain her own consent to lay aside her tea and coffee, she will be much the gainer. By pursuing this course, in conjunction with common prudence, every patient will be restored from a confinement of even for many years, to perfect health.

But here we are met with several objections to our practice. They also come from sage personages, and gray heads, whose authority it is in general not very safe to deviate from.

We will honestly state the objections below, and answer them just as conscientiously as we state them.

First, we are met at the threshold, and told that our pathology of the disease is incorrect, that the complaint is caused by a weakness of the uterine supports, and that the round and broad ligaments do not act as a support to the uterus. Now, concerning the assertion that the malady does proceed from primary weakness of the ligaments, we only refer you to our anatomical remarks, and to this fact, that taking off abdominal weight always will relieve the patient. Secondly, as to whether the round and broad ligaments do support the uterus perpetually, we say that reason pronounces this attempt to show that they do not, is more ingenious than useful or wise. We have only two reasons to urge in support of the fact that all the uterine ligaments constantly assist in sustaining the womb. First, when I see a body suspended in space, and attached to several firm and fixed points, by one or more ropes or tissues, my common sense tells me that they are all concerned in the support of that organ or body; some may yield more support than others, but they will, in their place, be considered as the suspensory powers of that body. But especially will we be drawn to this conclusion when we can see no other important function for these connecting organs to perform. But again, if these organs were not designed to be the perpetual and proper supports of the uterus, why is it that the descent of this organ is generally attended with the dragging pain in the groins, where the round ligaments are inserted? and why is this general relaxation so universally accompanied by that dragging, grinding pain, and weakness in the lumbar region, the very region where the broad ligaments are dispersed? There can be no other reason but that these ligaments are put upon the stretch, and their insertions are the extreme points of resistance, producing these peculiar feelings that are diagnostic of mal-position of the pelvis and abdomen.

The next objection is, that external support does no good; that it presses as much upon the uterus as it presses off, and that they have seen these supports do mischief.

In reply to this, we say that most gladly would we rest this point upon facts, for the profession and the world to judge; but as it cannot be brought universally before the sense, of either the profession or the people, we return to the physiology of the human system. The point to be settled is, if prolapsus proceed from the superincumbent weight of the bowels, can any external support relieve this pres-

sure? We say that most assuredly it can, as is proved by a multitude of facts corroborative, and by physiological points. First, it will be remembered that the posterior floor of the abdomen, or brim of the pelvis, is several inches higher than the pubes, or anterior part of the abdominal floor, or brim of the pelvis. Consequently the peritoneum, or lining membrane of the belly, that is stretched across the brim of the pelvis, forming the floor of the abdomen, is much higher behind than before, and looks obliquely forward and downward, like one side of the roof of a house. Hence we see that this form would facilitate the pad of the Lace, which lifts upward and backward, in getting between the floor and the bowels, and allowing them to rest upon it.

But here again we are met by another objection, to wit: that the weakness of the muscles is not the cause of the mal-position, but that it is a relaxation of the ligaments. That the latter is not the fact, is proved by the invariable relief to these complaints by the application of pressure upward and backward. But again; if judicious pressure, imitating the action of the muscles, will not relieve the patient, then we are placed between the horns of a difficulty, as we will now show.

It has been admitted that the natural action of the abdominal muscles, when in health, and all acting in concert, is upward and backward; it is also admitted that they are the actual organs that do support the viscera, and perpetually preserve their determinate form and position. It will of course then, be admitted, that the more healthy and elastic these organs are, the more perfectly will they effect this perpetual elevation and protection of the pelvic viscera. Now, if this be the case, the inverse ratio of strength and activity of these muscles will be attended by an inverse action on the viscera, to wit: gravitation, thus proving that a relaxation of the abdominal muscles will act as an exciting and perpetuating cause of prolapsus. But again; if a judicious upward and backward pressure be applied, and produce as much pressure downward as upward, then of course, by parity, the more healthy the abdominal muscles are, and the more active and elastic they are, the more will they tend to produce prolapsus, by pressing part of the bowels more forcibly on the uterus. This conclusion is a fair one, and necessarily compels us to decide that a relaxation of the abdominal muscles may be the cause of prolapsus, and general mal-position of the abdominal and pectoral organs, and that external support, like that supplied by the Lace,

will relieve these effects, or that the more healthy the muscles of the abdomen are, the more perfect will be the prolapsus. This latter conclusion would be so ridiculous, that no one would consent to its tenability. But we are met here by another objection of a very grave character, which has an actual existence in theory, but not in practice, in the case under consideration, to wit: it is admitted, say some, that external support does give immediate relief, but that it does it in an unscientific manner, and in opposition to a known law of the vital economy; i. e. they say, that a temporary relief is gained, at the expense of a permanent evil; to wit: that if you do mechanically or artificially perform the function that an organ should perform vitally, you will increase the torpor of that organ; its stimulus for action being withdrawn, it will rest on the support, and finally lose its tone entirely. This is physiologically and theoretically true, and in accordance with a law of the human economy, and when applied to muscles in health, as when the farmer or blacksmith lay by their calling, and bandage their muscles up to support their bodies, and take no exercise, they will dwindle, and become weak; or if you apply support to a patient, and compel him or her to take no exercise, to strengthen the system, and give her not the advantage of every invigorating circumstance, of course the present relief will be followed by the effect stated in the objection. But in the present case, the situation is far different; we come to, not a well person, but a sick one, who is laboring under both local and general muscular relaxation, and its effects; these effects have become very aggravating, and now both the effects and the cause coöperate, enfeebling the patient very much; so much so, that the very exercise that is calculated to relieve her, (even the most gentle carriage exercise,) aggravates the difficulty, and increases the patient's misery; and that, too, just in proportion to the effort she makes. The fact is, she is ineligible to those most efficient curative means, and something must be done to give her the advantage of the means that nature has pointed out to relieve her. Now, how shall we do this? Common sense says, why, bind her up, that she fall not to pieces; hold her comfortably together, by imitating the primitive relation, and by this means she will bear to be moved briskly into the air, and into society, and soon she will endure bodily exertion, and unconsciously will find every fibre gaining tone.

But what would our patients say to us, were we to address them in the following language, which is the spirit of the

scientific objection? This is it. My friend: you now are laboring under great distress, and *have* been for years, in consequence of a loss of vitality and energy in some of your organs, producing general displacement of all the organs of your trunk. You have been thus ill a long time, and I among others, have tried my utmost to render efficient relief, by pessarys, tonics, anti-spasmodics, and all other remedies that *promised* any relief; — but I am compelled to say, that my resources are exhausted. To be sure, I know of a very simple and comfortable remedy, that would afford instantaneous relief to you; relieve your spirits, relieve your pains, and enable you to exercise, and go into the air, and into society; and while you use it, almost make you forget your troubles. But I must warn you against its use, for there is great danger of your getting into a habit of depending on it, and finally can't go without it. Now considering that she has for years had nothing but a habit of enduring pain, and no prospect before her but to keep that habit, having been kept scientifically sick all this time, and all this a view of comfort, only for the danger of the habit of being comfortable; what language would express her indignity at this savage scientific inconsistency. Or if a patient, convalescing from an intermitting or remitting fever, had got able to walk into the invigorating air, by the aid of a cane, should be told, not so. You must wait till the powers of the system are able to carry you, or you will relax your weak muscles by depending on your cane, depriving them of the stimulus of exertion; you will also get in a habit of using it, and lasting evil will be the consequence. Who would not be indignant at this? or who would father such a position. Yet the opposers of judicious abdominal support, do actually lie under the same dilemma. But they *say* they do not, as the cases of the most protracted prolapsus are not thus ineligible to exercise, even without support. We say they are, and the perpetual sighs of millions continually say that they are, and common observation says they often are, and the success of the Lace, in relieving the oldest and most obstinate cases of prolapsus, proclaims the childishness and obstinacy of them that oppose this simple and mechanical means of relief; opposing it simply because facts run contrary to sainted antiquity, high names, and the speculations of science. These things are very pretty, but they cost too many lives, too many groans, and too much suffering and pain, to be any longer cherished. Oh, that I had the power of tearing away the hypothetical veil, and of showing in

captivating relief, the full ranks of facts, as they have occurred in the world, in opposition to the usages of the former writers. We now assume the offensive, and proceed to prove that these last objections are futile and reprehensible.

What is the course and view of those who advocate the objections just attended to? It appears to be this; that prolapsus is a primary disease, existing in the uterus or its ligaments; and that all of the attendant affections of the stomach, side, heart, lungs, and head, and in fact of the whole nervous system, are the result of sympathy, and not of natural and tangible causes, as explained in our physiological and pathological remarks; consequently they say that it is a local disease, and that the remedies should be applied to the seat and origin of the complaint; and that as descent of the uterus is characteristic of the complaint, of course, to elevate the organ, is the true indication. Of course, then, the only means of elevating this organ is to place a prop below to sustain it, thereby carrying it to its natural position. Indeed this has been the practice for many years, and extolled by the loftiest heads, and proudest names of the profession,—and in many cases, where the case was not aggravated, or of long standing, or accompanied with general torpor, or atrophy of the muscles, this means, in conjunction with invigorating constitutional remedies, and exercise, has done much good; but this does not prove its expediency or validity, and as we proceed, we will show that the probability is, that it has done more hurt than good in point of health, to say nothing of other objections to its use, which we will attend to. Now if this be correct, efficient, and scientific practice, let us examine into the condition of things. First, the objection to our supporting the viscera by mechanical means was, that it tends to weaken the powers of life, by doing mechanically what should be done vitally. Now let us candidly examine how it is that the pessary produces its boasted relief. Does it not do it by mechanically doing for the uterus, what its ligaments ought to do vitally? Does this not constantly tend to weaken those ligaments, by doing away the necessity for their own action, allowing them to become more torpid? for it is alleged that their previous debility was the cause of the descent. Most certainly this is the case in one instance, as well as in the other. So we see that their stupid objection on physiological grounds, applies as much to the pessary as to the external support. Then, so far as the danger of

mechanical support is concerned in the argument, the matter is neutralized; leaving the decision to be made up from facts and other points in the case. Again, it is said that the vagina is the principal support of the uterus, by contracting itself, like an India rubber tube. For argument's sake, we say, let it go at that, and we will pass on to scrutinize a little further. If, when there is prolapsus, there is generally a relaxed and dilated vagina, and this state of that organ will stand as the cause of the descent, what is the natural effect or action of the pessary on these parts? It appears to be this; that it perpetuates and aggravates the cause, i. e. the relaxation of the vagina, by occupying the utmost diameter of this organ, destroying its elasticity, and adding to its primary relaxation. It also acts as a foreign substance there, irritating the nerves of organic life, and provoking them to an unnatural action; this is followed by fluor albus, which in turn acts as an exciting cause both of itself and of the relaxation, perpetuating procidentia, and general debility. Now we ask, which course looks the most rational? Which course holds out the most natural prospect of relief, and acts the most in accordance with the normal relations of the system? Which course seems best calculated to conciliate the deranged nervous system, and to beckon back the powers of life to their wonted relation and action? Or, to say nothing of the amount of relief effected, which produces the wonted relief at the least expense, or with the fewest evils? The facts in the case, and reason, instantly reply, that this rational view should be preferred, until it is proved to be of no avail.

Again; let us view the comparative merits of the two practices, to wit, by external support and exercise, or by constitutional treatment and the introduction of a pessary, in another point of view, and see if in this view there can be but one voice on the subject, even allowing that one mode of treatment is not paramount to the other in point of efficiency. First, constitutional treatment—what is it? It is but an application to some of the reflected, or extended effects of the physical and primary cause. But of the pessary, what is associated with it in all its considerations? The very nature of the subject precludes a full examination of its peculiarities and associations. But who are they, that must wear the pessary? The mothers and the daughters, the fair sex, the virtuous, the modest, the dissident; those who hold female peculiarity as a pearl, deposited in the secret archives of the female cabinet. Who are they? They

are our mothers, our wives, our sisters, and our daughters. And again we ask, who are they? Ask your observation of things and events, and you will see who and what they are; something which, constitutionally, intellectually, morally, and intrinsically, is better conceived of than described. But to make the matter perfectly obvious in its comparative merit, let us slightly contemplate what is embraced in the use of the pessary. First, it implies as a general rule, that both mothers, wives, sisters and daughters, on suspicion of existing prolapsus, must submit to an actual inquisition, (not exactly ocular,) but *next* to that, so far as temporal matters are concerned; this itself seems like an unhallowed entrance within the vale, i. e. of female sanctity. But by whom is this inquisition instituted? by her, or themselves, who often blush at the contemplation of themselves? No. Is it by a father, or a husband, or a brother? No; but by a stranger; perchance a *devil*, with no sympathizing feeling for his patient, or sense of moral obligation; and what gives edge to the matter, is, that it does not take place under imminent danger or racking pain; but in a state of exalted nervous sensibility, and comparative health, at all times and hours of the day. But again; the bitter part is to come; for it is now a fact, that the unmarried, from fifteen years upward, as well as married females, labor under the class of diseases under consideration, and require the same means of cure. Now, to say nothing of the mental torture of the poor, and chaste, virtuous girl, — are even rough fathers, brothers, and husbands, prepared to like it? No, it is always attended by a sort of submissive, but humbled pride. Again, considering it in its moral tendency, it is truly *demoralizing* in its nature. Previous to submission, the poor creatures would give every thing if they could avoid it, they feel as though they were about to be ruined; yea, to be offered on the altar of degradation; but once done, the die is cast, the relief obtained or not, the mental anguish is over, and the matter sinks in her imagination; it becomes a necessity, a common occurrence; she now has the outer strong door to the beautiful temple of chastity broken down, or severely tried; I mean the door or bar of female delicacy and suspicion. Moral feeling is blunted, fine feeling put to sleep; whatever the doctor says, soon becomes a law, and a matter of course; and the sprightly, roguish, and blithe countenance of the young girl, is exchanged for the premature gravity and tameness of the mother, who has been stricken by all the accumulated and incidental exigencies, and peculiarities of the

connubial state. But I leave the subject now; it is enough; when the matter is duly considered, there will be but one voice. As this subject has been shown up, not only does it appear that we, by the use of external support, avoid these moral objections, but we instantly, and more perfectly, obtain the desired object; extending not only to the local affections, but to the reflected and extended associations also.

FLUOR ALBUS.

This complaint is almost universal, and generally exists along side of prolapsus, or muscular relaxation; though it may depend upon other causes, not connected with this relaxation, requiring a correspondent specific treatment. But in a majority of cases, it is but the natural, and often the necessary effect of the morbid mechanical relations of the pelvic contents. The womb is pressed into the vagina, distending it, and destroying its elasticity; the little *ducts* or exhalants on its service are both relaxed and expanded, and they pour out the leucorheal discharge in a most exhausting manner; this is also aggravated, by the presence of the uterus in the vagina, acting as a foreign substance, and the discharge operating somewhat like a mock *suppuration* to relieve the vagina, as in the case of matter being formed and discharged where a ball or sliver has lodged in the flesh. Of the treatment of this affection we have but little to say; the course indicated is plain. Apply the Lacc judiciously, regulate your general habits, particularly those of exercise; and go into cheerful company, and good air. Avoid exciting causes of every description, and in nine cases out of ten, relief will soon follow, the cause having ceased to exist.

UTERINE HEMORRHAGE AND EXCESSIVE MENSTRUATION.

Between these two diseases, it is often difficult to draw a distinction, sometimes one running into the other, and sometimes both existing at once; my private opinion is, that they are only different degrees of the same thing. We explained in our remarks on prolapsus, how the nerves of organic life in the uterus might become either torpid or irritated by this morbid mechanical relation, producing either suppressed menses, profuse menstruation, or flooding.

We have never known a case of this kind, to resist the efficacy of the Lacc, when skilfully applied; to say the least, it will remove many of the exciting causes, and aggravating effects of the malady, if it do not remove the disease; thereby enabling the patient the better to bear up under the exhausting discharge.

We have now closed our remarks on disease and its treatment. They are very imperfect, and come far short of what is wanted: but they have already extended to three times their intended length. This work was, and is now, only designed to attract both professional and popular attention to the real nature and proper treatment of the diseases on which we have treated so cursorily. It is hoped, that at LEAST, they will elicit from some one of talent, a much more perfect work on this subject, that will fully answer the necessities and demands of society.

I have reluctantly given my consent to this book's present publicity, as I am not insensible to its imperfections and inaccuracies, but the public clamor for it, as it is. If my life is spared, perhaps I may resume the subject more at large, and with better taste, (if I possess it.)

It may now be asked what are the direct signs that the Laceration may be employed to advantage without an accurate knowledge of either or all of the above described diseases? We say in reply, that it never does any harm, but for the specific direction of the inquirer, we add the following set of symptoms, all or a part of which, will indicate that the sufferer will find advantage from the judicious application of the Laceration:

SYMPTOMS.

Bleeding at the lungs, cough, pain in the chest, particularly in its centre and inferior region, shortness of breath, sensation of tightness or stricture about the chest, especially when in the erect posture, and the chest thrown forward; palpitation of the heart, to a greater or less degree, dyspepsy in all its forms, as indicated by a pain in the stomach after eating, sense of a load, as if some hard substance was deposited; heartburn, waterbrash, spitting up of the food, attended with capricious appetite, gnawing sensation at the stomach, sensation of goneness, or sinking at the pit of the stomach, with a retraction at that place; disposition to sit or walk more or less bent forward, pain in one or both sides, which are generally supposed to be the effect of liver complaint, but are only the result of gravitation of that organ. More or less tenderness of the abdomen, especially on being jarred or jolted; abdomen the most pendulous at the pubes, the walls being very flaccid, so that the patient can grasp them in the hand in any quantity. Also, a sensation of dragging in the groins, with a bearing down, or pulling sensation, causing the patient to stoop very carefully;

there will generally be more or less pain in the back, of a grinding character, with great weakness there; often the patient feels great weakness in the hips, and pain in one or both of them, or numbness of the limbs. There is also most generally, (especially in females,) a weakness in the limbs, disallowing them much exercise, and often accompanied by pain and numbness, and sometimes by loss of motion in them. Costiveness is an almost constant attendant on the foregoing signs, also Fluor Albus, Piles, and Prolapsus. The nervous system, in a diseased state, is particularly under the power of the Lace. For instance, ringing in the ears, dizziness of the head, on reaching or stooping, feebleness of mind, or confusion of ideas, disposition to great gloom and desponding, weeping, often apparently without cause, and not knowing why herself; disposition becomes irritable and peevish, and memory fails. The patient may come to the dreadful gloom of insanity, or the perpetration of the horrid crime of suicide; very much more might be said, but the above is sufficient.

Ladies in pregnancy may find surprising relief from the use of the Lace; but more especially those who are in child-bed, should always have one ready to apply; thereby filling up the great vacancy, feeling more comfortable, and avoiding the exciting cause of prolapsus, with weakness of the back, and the common evils of child-bed, arising from a too sudden getting up.

DIRECTIONS FOR THE APPLICATION AND USE OF THE LACE.

1st. Be certain to have an exact fit, and that it feel comfortable, or at least not uncomfortable, in any part. To this end, never trust any but an experienced hand to make the first application, as otherwise you may frustrate your hopes of success; for a small lack of adaptation will often produce much inconvenience.

2d. Let the strength be well proportioned to the amount of relaxation and sensitiveness of the patient. Too much pressure will make the patient restive and irritable, occasion soreness, and discourage her in the continuance of its use. In a word, let the strength be such as affords a sense of comfortable support, and not of compression. See that all the pads are in the right position, and feel comfortable.

3d. How to put it on, and take it off. Let your body be in a horizontal posture, so as to elevate the abdominal viscera as much as may be; then take your Lace in your right hand around the front pad, grasp it firmly. Pass your left

hand under the small of your back, and press the palm on the upper and lower pads, then open the Lace so wide as to abundantly admit the body; then carry on the Lace, thus open, so as to bring it to the exact spot without dragging; let the curved part fit exactly in the soft space between the haunch bone and the ribs; then fasten it comfortably tight by the strap that passes round the left side, and hooks on to a stud on the ends of the main spring. Should the instrument incline to slip up, and should there be weakness of the perineum, use the perineal pad, as follows: hitch the long and broad straps to the studs or hooks on the lower back pads; bring the rest of the strap between the limbs, and hook them on the studs or hooks on the front pad. In general, let the pad be so far back as not to interfere with the urinal evacuation. When the Lace is adjusted, be sure to hold down the front pad with one hand, while with the other you raise the abdomen so as to insinuate the lower edge of the pad, under the whole mass, allowing it to rest on the pad, and not be too much pressed by it. If you are irritable, do not wear the lace long enough to be irritated too much at first, but increase in its use as your endurance increases, and when you lay it by, select a time when you are going to be at ease, and put it on when you attempt to exercise. And if you are vigorous in exercise as described heretofore, you at length may lay it by, and live without the necessity of its frequent use.

GLOSSARY.

Aberration, the act of going astray.
Anhelation, shortness of breath; difficult respiration.
Anus, the lowest part of the intestine.
Assimilation, the reduction of aliments to the body; "the union of aliments to the body."
Broad Ligament, a support to the womb.
Carotid Artery, main artery in the neck.
Cartilago, gristle.
Cartilago ensiformis, the tip or extremity of the breast bone.
Cellular, full of cells.
Cerebral, pertaining to the brain.
Colon, the large bowel.
Diagnostic, judgment of a disease from the symptoms of the patient.
Diaphragm, the muscle separating the chest from the abdomen.
Diathesis, state of the body as to health.
Fæces, excrement, settlings, sediment.
Fæcal, consisting of sediment, or alvine excrement.
Fundus, a sling, or stirrup.
Gleutei Muscle, fleshy portion of the buttock.
Gravid, being with child.
Hepatic, pertaining to the liver.
Hepatitis, inflammation of the liver.
Hypertrophy, enlargement.
Hypogastrium, middle part of the lower region of the abdomen.
Incontinence, not holding.
Innominata, haunch bones.
Linea Alba, white line in the centre of the abdominal walls.
Lumbar Region, the region of the loins.
Mediastinum, membrane separating the chest into two divisions.
Membranous, consisting of membranes.
Os, bone.

Ossa Innominata, two haunch bones.
Parities, walls.
Pathology, philosophy of diseases — their nature, causes, effects, &c.
Pectoral, pertaining to the breast.
Pelvis, the lower cavity of the trunk.
Peritoneum, the membrane which encloses all the bowels.
Phthisis Pulmonalis, consumption.
Physiology, the science of the properties and functions of the human frame.
Physiological, pertaining to physiology.
Pulmonary, pertaining to the lungs.
Rectum, lower part of the large bowel — the straight gut.
Retroversion, a turning or falling back.
Round Ligament, a support to the womb.
Sacrum, rump bone.
Sanguiferous, conveying blood.
Scrobiculus Cordis, the pit of the stomach.
Sigmoid Flexure, bend of the colon, as it passes into the pelvis.
Spine, back bone.
Strumous, relaxed, or chronic.
Synchroneal, happening at the same time.
Tendon, a hard bundle of fibres, by which a muscle is attached to a bone.
Tendinous, partaking of the nature of tendons.
Tissue, texture, or organization of parts — a connected series.
Trochanter Major, bony protuberance on the hip.
Tympanites, a flatulent distention of the belly.
Umbilicus, the navel.
Vagina, the membranous passage to the womb.
Ventricles, small cavities in the body.
Vertigo, dizziness in the head.
Viscera, the bowels, or intestines.

